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Vol. 29 • Issue 2

Masters of molding accuracy.

AOSHIMA

From the wedge-shaped silhouette of the iconic Lamborghini Countach, to the one-of-a kind replica of an actual, asteroid exploration craft, Aoshima's execution of detail is remarkable.

The attention to precision can also be explored in the rendering of the *Light Cruiser Tama* and the bold realism of the *H-II Transfer Vehicle HTV*. Build and enjoy these introductions from Aoshima.

▲ **(5049020) 1/32 Scale Hayabusa Planet Search Vehicle**
Aoshima's kit perfectly depicts Japan's Hayabusa asteroid explorer, the first unmanned spacecraft to land on an asteroid and blast-off again.

◀ **(5046708) 1/24 Scale Lamborghini Countach LP400**
The wide, low, sharply angled contours of this Lamborghini Countach are perfect. Like the original, the scissor doors of Aoshima's model can be opened. Headlights and engine hood open and close, and the V12 engine is boldly reproduced.

◀ **(5049648) 1/72 Scale H-II Transfer Vehicle HTV**
An unmanned Japanese spacecraft used to supply the International Space Station.

▲ **(5044223) 1/350 Scale IJN Light Cruiser Tama (1944)**
A recent addition to Aoshima's Ironclad Series, the Tama is a full hull kit complete with float plane, catapult and detailed armament. Display stand included.

AOSHIMA. Details. Delivered.

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1/12 SCALE

The All-Conquering '09 MotoGP Machine

1/12 Scale Yamaha YZR-M1 '09 Fiat Yamaha Team

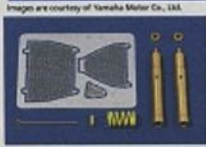
Item 14117

The 2009 MotoGP season will be long remembered for the domination by two Fiat Yamaha Team riders. Out of 17 races, Valentino Rossi claimed six victories while teammate Jorge Lorenzo took four, leading to 1st and 2nd respectively in the Riders' Championship. The pair also recorded an impressive five 1-2 finishes. In addition, Rossi achieved his 100th victory in the MotoGP and became the rider to record the most all-time podium finishes. The Fiat Yamaha team's memorable season was capped off by their retention of the Riders', Teams', and Manufacturers' Championships. The powerful form of the Fiat Yamaha YZR-M1 '09 is now immortalized in Tamiya's 1/12 scale Motorcycle Series. ★This is the first model kit of a MotoGP motorcycle which had an 800cc engine as regulated from the 2007 season. ★Mechanical features including the 800cc inline 4-cylinder engine, frame, and front/rear suspension, are faithfully reproduced. ★Synthetic rubber used to model the actual bike's 16.5inch slick tires. ★Cowlings are secured with small screws and can be removed even after assembly. ★The Yamaha emblems on the fuel tank feature a realistic finish. ★Masking seals included.

Special Bonus

First production run will include a 85-sized photographic reference leaflet.

Images are courtesy of Yamaha Motor Co., Ltd.



DP Detail-Up Parts Series

Yamaha YZR-M1 '09 Front Fork Set Item 12636

Set includes parts such as aluminum outer struts and photo-etched radiator guards to give your model an even more detailed finish.

Liven-Up Your Model

This autumn will see the release of a rider figure to depict Valentino Rossi on his bike in an exciting cornering pose. Parts such as the helmet and riding suit are also faithfully rendered.

1/12 Scale Motorcycle Series

Valentino Rossi Rider Figure (High Speed Riding Type)

Item 14118

Length: 172mm

cartograf

Top quality Cartograf markings to depict Valentino Rossi's No.46 and Jorge Lorenzo's No.99 machines included.

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Winter whitewash, Zimmerit, and skillfull weathering give a realistic appearance to this German main battle tank. Follow along as author Karl Logan rolls into action with the mighty King Tiger.

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Editor's Page

By Matthew Usher

On the universal and timeless laws of model building

PARKINSON'S LAW states "Work expands so as to fill the time available for its completion." While Mr. Parkinson was commenting on the bureaucracy of civil service, his law easily applies to many of life's pursuits, especially model building. I'm really speaking from personal experience this time. Late last night I finished the Corsair model that appears on page 44 of this issue in the last installment of our new "Scale-modeling essentials" series. And when I say late last night I mean *late* last night. I have patches of Navy blue paint on my hands and under my fingernails as I type this. When I get home tonight I won't be surprised if the model still smells a little like paint.

LATE LAST NIGHT I FINISHED THE CORSAIR MODEL THAT APPEARS ON PAGE 44 OF THIS ISSUE

Sure, my situation is different than most other modelers'. It's my job to build models against the magazine's deadlines, so I've run into a few late-night building sessions over the years. But I'm sure I'm not the only one. Several times a year we attend model contests to photograph the entries and to talk to their builders. It's a great opportunity to look at great models up close, under the photo lights.

Builders are always surprised when I look up from the camera viewfinder and say "You just finished this model, didn't you?" With shocked looks on their faces, they always ask how I can tell. It's easier than you might think. The first sign is usually the faint smell of still-curing paint rising from the model. The second is the appearance of modeler's hands. The paint spattered on them is always a perfect match to the camouflage scheme of the model sitting in front of the camera.

I'm going to take a little time to unwind from this latest deadline, but I've already picked out my next project. I'll get started on it in earnest in a couple of days, as soon as I can get all this blue paint off my hands.

Enjoy the issue!

Matthew Usher

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GENERAL

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READER TIPS

Would you like to share an idea about a tool or technique – and make a few dollars too? Send a brief description along with a photograph or sketch to "Reader Tips" (address at left under *General*). Please enclose a stamped, self-addressed envelope for the return of photos. E-mail your tips to tips@finescale.com or visit FineScale.com and click on "Contact Us." Tips are paid for upon publication; if you live in the U.S., include your Social Security number. *FSM* obtains all publication rights (including electronic rights) to the text and images upon payment.

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Scale Talk

Your voice in *FSM*

My personal hobby store

It always amuses me when I read about stashes of kits readers and writers have. I had to step back and laugh at myself this evening.

I was out in my garage looking for a specific kit and I realized I have a small hobby store's worth of stash. Four years ago, my local hobby shop of choice was closing its doors and, as it got closer and closer to the last day, the prices kept dropping. I ended up picking up a whole stack of decal sheets for various aircraft and, when I sat down and figured out what I needed to have to make use of them, the shopping started.

I have 12 F-4s, three F-15s, two F-100s, nine F-102s, three F-105Ds, six F-105Gs, six F-106s — and that's just one shelf. This doesn't even include all the World War II kits, ships, and science-fiction kits, plus enough German armor to win the Battle of the Bulge. It's nice to be able to choose from a variety of kits to work on and find locations to display them. Now, if only my wife would let me hang my 1/72 scale *Gato* in the family room … but that's another story.

– Eric Hansel
Steilacoom, Wash.

Sometimes stuff's expensive

Just a pet peeve of mine: I get the feeling that anyone who builds a kit "straight from the box" anymore is not a true modeler. All these newer kits demand so many aftermarket parts that an out-of-the-box build doesn't seem to cut it anymore.

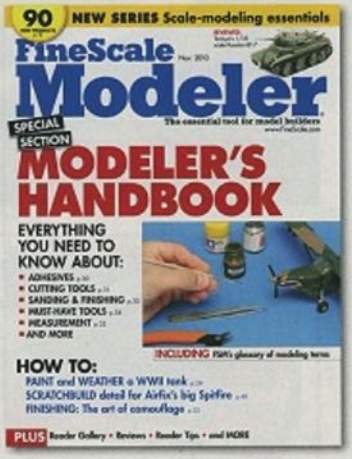
Some of the kits I've seen featured with all the aftermarket products must be worth a fortune! I certainly can't afford to spend $50 to $60 for a kit, then double that for even more aftermarket parts. A lot of those guys must have good jobs! If I did that, I'd be sleeping in my pickup after my wife found out!

– Phil Lewis
E. Falmouth, Mass.

Big Spitfire

In Andy Cooper's "Scratchbuilding detail for Airfix's big Spitfire" in the November 2010 issue, his finely executed "extended landing gear position indicators" near the rear edge of the wing are actually *flap* position indicators.

When they were up in the open position, the flaps were down. When flush with the wing skin, the flaps were up. The gear



position indicators were forward and inboard, located just behind the wing main spar, and consisted of rectangular rods which rose from the skin when the gear was down and were flush with the gear retracted. They are poorly represented by Airfix as small rounded bumps, but are in the correct position on the wing. Just an FYI in the name of accuracy.

– Norm Sheppard
New Brunswick, Canada

1/48 aircraft accessories

This is a note for all the companies that make 1/48 scale aircraft, especially Revell, ICM, and Eduard. I have been looking for a detail set for my American World War II aircraft, one that includes tools, a workbench, an engine hoist, and other details such as gas cans, fuel drums, and a bomb cart.

All I have been able to find so far is the figures that come with my Revell models, and in one of my newest magazines I have found figures and a few tools in just two different sets.

Let's get with it here and put together something that some of us would like to see. Eduard and ICM make enough stuff for German and British models now. How about making something a bit better for U.S. aircraft? In the diorama I am currently working on, I had to order from Tamiya, Eduard, and True Details to get some of the things I needed, and I still don't have everything I'd like to finish it with. Get on the ball, companies, and see what you can make for us aircraft modelers!

Thank you for your time.

– Arthur H. Havens
Indiana, Pa.

Inspiration

When I saw the letter by Paul Webb in the November 2010 issue about modeling to keep our spirits high in difficult situations, I knew I had to respond.

I have written before to your sister magazine, *Scale Auto*, about the same thing. In 1978, I was involved in a motorcycle accident when a car ran a red light and hit me. I wound up in the hospital for nine months and was left with no use of my left arm and a partial paralysis on my left side. Inspite of all the other things that I was going through at that time, one of my biggest worries was whether or not I would be able to build model cars again.

Like Paul, I want other modelers who might face a similar situation to understand it is very important to stay positive in difficult times. To continue building, I have had to develop some new techniques and adapt others to fit. Through rehabilitation, I have been able to realize that *disabled* really means *differently-abled*. I now see obstacles as just problems to overcome.

NOW, IF ONLY MY WIFE WOULD LET ME HANG MY 1/72 SCALE *GATO* IN THE FAMILY ROOM … BUT THAT'S ANOTHER STORY.

I would encourage any person who might be in the same place that Paul and I were in to not lose faith in their inner strengths and abilities, and to see the possibilities in everything. I believe I am a better builder than I was before, because now I am forced to do one thing at a time and really think about what I am doing.

Through it all, I have also found your magazines to be an inspiration and valuable tool in helping me to become the model builder I am today. Thank you for your help.

– Gary Omen
Columbus, Ohio

Paint and Weather 2

I recently received and really enjoyed the Kalmbach publication, *How to Paint & Weather Scale Models 2*. It was very informa-

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tive and educational. In the future, perhaps Kalmbach could publish a *How to Paint & Weather Scale Models* geared toward individual subject areas. One issue could focus solely on armor, others on aircraft, naval, or automotive models. I'd also like to suggest articles focusing on the varied brands of paints and finishes. I would like to see a discussion on the pros and cons of each manufacturer.

Getting back to *How to Paint and Weather 2* — being an armor enthusiast, I found Lynn Kessler's "Weathering tank tracks" most interesting and valuable. The article did neglect to mention whether the base colors necessary were glossy or flat finishes.

Lynn's end result is most authentic in appearance, and I'm sure many armor modelers will be utilizing his technique on future projects. And, as always, I enjoyed the Show Gallery section. I especially enjoyed the T-34/35 vignette and the triceratops diorama on Page 82.

Keep up the good work!
– William Mezzano
Addison, Ill.

A lesson in each issue

Just wanted to drop you a quick note and thank you for an outstanding magazine.

I, like many modelers, started modeling as a kid and drifted away when college, jobs, and marriage took over my life. I started modeling again about 10 years ago and have been enjoying your publication ever since.

I especially like the balance between in-depth, advanced topics and more fundamental ones. I never fail to learn new things.

I also really love the helpful how-to videos on FineScale.com and enjoy the conversations on the forum. I look forward to each month's edition and am grateful for all the help I've gotten from reading your magazine.

Keep up the great effort!
– Michael Meisel
Cordova, Tenn.

A review to relate to

I have been a subscriber to your magazine for more than two years and have been modeling for 15 years or so. I really enjoy your magazine and find it very helpful.

I am a pilot for Republic Airways (parent company of Frontier Airlines). I was really happy to see your Workbench Review of Hasegawa's 1/144 scale Embraer 170 in the December 2010 issue, mainly because it's the airplane I fly!

I was, however, a bit disappointed that my company wasn't mentioned as an operator of this type — especially since we are the largest operator of E-jets in the world!

Thanks again for the review.
– Bryan Peterson
Chanhassen, Minn.

A quick thank-you

I'm just writing this letter to thank you for posting the photo of the Revell Imperial Walker I built in FineScale.com's online reader gallery.

It is a thrill for me to see my work displayed on the website of your great magazine. I enjoy reading every issue from cover to cover, and I look forward to the next issue!
– Pierre Lagisquet
Brandon, Fla.

Mirror-display question

I really enjoyed Frank White's technique of using a mirror to give the illusion of aircraft models in flight in the December 2010 issue. I have a project on which I'm eager to use it! I was left, however, with a lingering question.

I assume the mirror reflects everything in its surrounding, including things like the cinder blocks of my basement or my face as I'm looking at the model.

I did notice in one photo of Frank's finished diorama that the mirror reflected a blue sky and clouds. Was that just added using photo editing software, or are there any suggestions how to achieve that more realistic effect? I really liked the way the sky looked in the mirror's reflection and would like to recreate that on a model.
– Brad Hicks
Mequon, Wis.

To answer your question, Brad, the photograph was simply taken using a backdrop of the sky and careful positioning of the model so the camera was not reflected in the mirror. Although it's not a permanent way to add a realistic sky to the display, it's a great way to take a realistic photo without photo-editing software.

Reviewer compliments

I wanted to commend Matthew Walker for the stunningly beautiful Kinetic 1/48 scale EA-6B Prowler he built and reviewed in the December 2010 Workbench Review section.

I have always thought the Prowler is such a neat-looking aircraft. The folding wings option for that kit looks awesome, too.

As an interesting sidenote, the Prowler is scheduled to be retired by the U.S. Navy four years from now, and the U.S. Marine Corps is scheduled to retire its Prowlers in 2019.
– Chris Black
Grapevine, Texas

The importance of trial and error

I just received the December 2010 issue in the mail and had to write in and tell you how much I enjoyed the issue!

As a begining modeler, I really enjoyed Aaron Skinner's "Filters: A subtle addition." It really is simple techniques, like adding filters, that make your models stand out from others. Thanks for that tip!

I also really enjoyed reading "Foiling for realism." Although I'm not sure I'm brave enough to try Ken Friend's technique for making metal finishes, it is really inspirational to see his finished models.

I recently began modeling, and I have found every issue of *FineScale Modeler* I have read to be extremely valuable. I am learning something with each new project I take on. Most importantly, I am learning that trial and error is one of the most important methods in modeling. It is sometimes a little discouraging to have a project not come out quite as I would've liked, but it also is motivation to move on to the next model.
– David Mielkie
Lansing, Mich.

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Great Wall takes to the skies with Uhu

When detail-set maker LionRoar spun off Great Wall Hobby to make full plastic kits, its first model was the German sWS halftrack with infrared searchlight, known as the Uhu.

Now, the Chinese company has expanded its catalog into aircraft. The first is the Focke-Wulf Fw 189A-2 Uhu (kit No. L4803). And a great-looking kit it is!

Molded in gray plastic, the parts have fine, sharply engraved panel lines and petite rivets where appropriate. I particularly like the small hinges molded with fuel caps and other hatches.

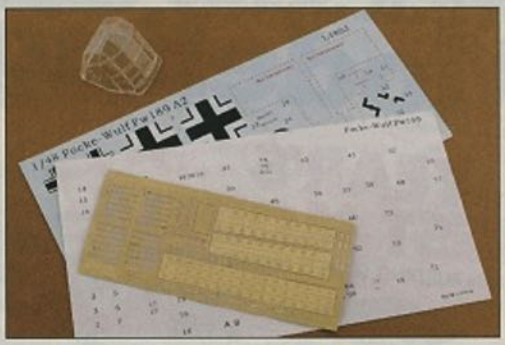
The kit features a superbly detailed crew compartment, with framing molded on the walls, a good-looking pilot's station including photoetched-metal harness and rudder pedals, instruments and consoles, and scale-thin gun barrels with photoetched-metal sights. All of this detail should look good underneath all of the glass. There are two front canopies, but only one is used in this kit. So, expect other versions of the Uhu. Great Wall provides pre-cut paper masks to help mask the 77 panes of glass.

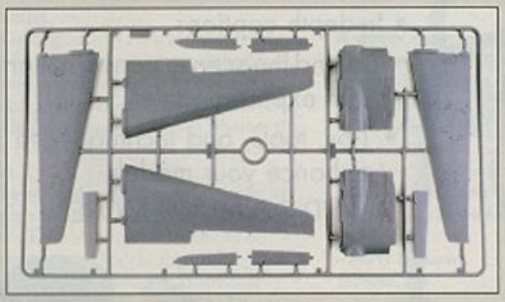
Other features include two detailed Argus engines with posable cowl flaps to display them, weighted tires, and photoetched-metal inserts to detail the interior of the wings above the posable flaps. All of the control surfaces are posable, and there are even two maintenance ladders.

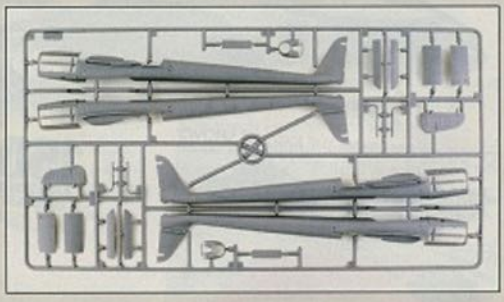
Decals, including three-part swastikas, provide markings for two Eastern Front aircraft, one in the typical Luftwaffe three-color camouflage of RLM 70, 71, and 66, the other in winter white.

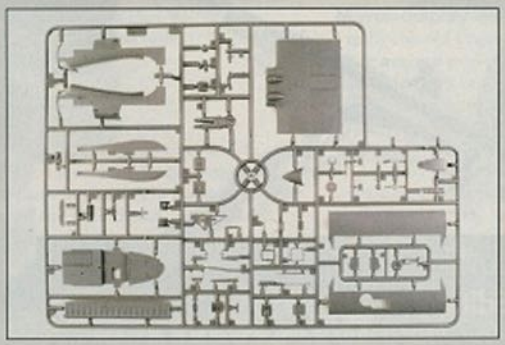
This is a great first effort, and I can't wait to see the follow-up. Look for a complete review in an upcoming issue of *FSM*.

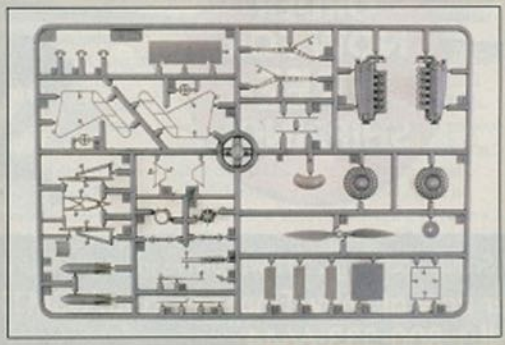
The kit, distributed in the United States by Dragon Models USA, costs $41.95.











In-depth how-to video for Fw 190

FSM **Editor** Matthew Usher and I were impressed with Dekker Zimmerman's 1/32 scale Fw 190A-6 when we saw it at the IPMS/USA Nationals in Phoenix last year. Now you can learn how he built and finished the Luftwaffe interceptor with his DVD set "How to build the Fw 190A-6 in 1/32 scale" from Maus Werx.

In the course of nine hours of video, Dekker describes detailing the pilot and cockpit, basic construction, weathering, part modification, and a whole lot more. The presentation isn't fancy, but there is a lot of information that is applicable beyond the Fw 190. Extras include walkaround and reference photos as well as an RLM paint chart. The set is recorded in NTSC, although the website says PAL is available on request.

The DVD set is available at www.mauswerx.com for $79.98.

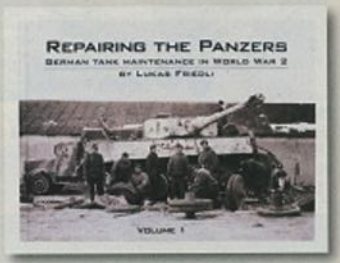
German tank maintenance detailed

Looking for a way to display your next German tank? Then take a look at *Repairing the Panzers – German Tank Maintenance in World War 2, Volume 1* (Panzerwrecks, ISBN 978-098418202-2), by Lukas Friedli.

Printed in landscape format, the 256-page book gives background on techniques used to repair German vehicles in the field, with illustrations and photos of vehicles used.

After chapters about repairing tanks and wheeled vehicles, there are interesting discussions of tank repairs during and after Operation Zitadelle (the Battle of Kursk) drawn from German reports, then a chapter about causes of tank losses.

Just like other Panzerwrecks books, there are a lot of great photos, with images of tanks being serviced in the field and at depots. Any of these could be the inspiration for a diorama.



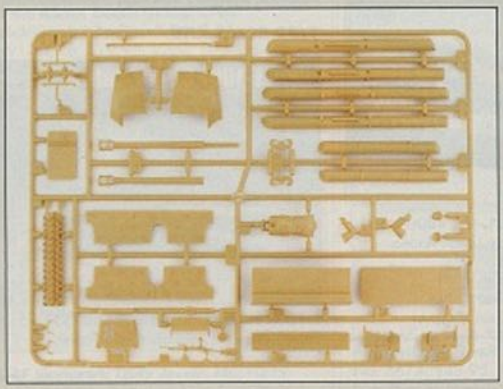
Repairing the Panzers is available at www.panzerwrecks.com for $54.95.

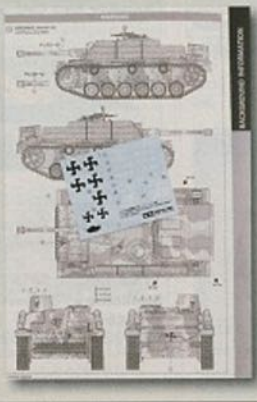
Tamiya StuG reaches the Finnish line

Besides Germany, one of the best known users of the StuG III assault gun was Finland. Finnish StuGs were often up-armored and carried different equipment than German vehicles. Now Tamiya answers the requests of a lot of modelers for a Finnish StuG by adding a sprue of parts to the company's outstanding StuG Ausf G.

The new kit (No. 35310) has concrete armor for the front of the fighting compartment, log armor for the sides, bolt-on armor under the fenders, a stowage box on the engine deck, and a Soviet DT machine gun. Decals provide markings for two StuGs in Finnish three-color camouflage. This is a welcome addition to my armor collection and seems destined to go to the front of my in-progress queue.

The kit costs $40 and is distributed by Tamiya America, 800-826-4922, www.tamiyausa.com.





Shift your car modeling into high gear

Need car modeling advice? Look no further than *Build Better Model Cars*, from *FSM* and our sister magazine, *Scale Auto*.

Inside, there are techniques and ideas that take the mystery out of model cars, including articles on basic construction and painting to body chopping and engine detailing. Order *Build Better Model Cars* for $7.95 at www.kalmbachstore.com, or 262-796-8776.

New Products

Compiled by Monica Freitag

AIRCRAFT

1/32 SCALE KITS

Sopwith Triplane, No. 609, $74.95. Look for a detailed review in an upcoming issue of *FSM*. From Roden.

1/48 SCALE KITS

Nakajima Ki-27 Type 97 "Nate" fighter 64th Flight Regiment with figure, No. 09918, $47.99. From Hasegawa, available from Great Planes Model Distributors.

Ju 88A-4 Schnell-bomber with Luftwaffe ground crew, No. 5565, $29.95. From Cyber-hobby.com, available from Dragon Models USA Inc.

A description of our new-product announcement and review policies is available from Product News Coordinator, FSM, 21027 Crossroads Circle, P.O. Box 1612, Waukesha, WI 53187, 262-796-8776, fax 262-796-1383, or e-mail at newproducts@finescale.com. *FineScale Modeler* is not responsible for content of external sites linked through our site. Visit our FSM Web page at www.FineScale.com.

HH-53C Super Jolly Green Giant, No. 85-4542, $23.96. From Revell.

F-80 Shooting Star, No. 85-5311, $20.92. From Monogram, available from Revell.

Focke-Wulf Fw 189A-2, No. L4803, $41.95. Look for a detailed review in an upcoming issue of *FSM*. From Great Wall Hobby, available from Dragon Models USA Inc.

Antonov An-2 Colt (skis), No. 48005, $81. From Valom, available from GreatModels.

1/48 DECAL SETS

Brinkman's "Zodiacs" Set 4, No. KW148023, $19.95. B-24H *Virgo* M 252532, *Pisces* G 252517. From Kits-World.

B-24s of the 486th Bomb Group - Phil Brinkman's "Zodiacs" Set 6, No. KW148024, $19.95. B-24H *Aquaria* M 252545, *Aries* O 252793. From Kits-World.

B-24s of the 486th Bomb Group - Phil Brinkman's "Zodiacs" Set 1, No. KW148019, $19.95. B-24H *Leo* M 252768. From Kits-World.
B-24s of the 486th Bomb Group - Phil Brinkman's "Zodiacs" Set 5, No. KW148022, $19.95. B-24H *Sagittarius* H 252400, *Cancer* B 252650. From Kits-World.
B-24s of the 486th Bomb Group - Phil Brinkman's "Zodiacs" Set 2, No. KW148020, $19.95. B-24H *Libra* O 252508, *Capricorn* L 252744. From Kits-World.
B-24s of the 486th Bomb Group - Phil Brinkman's "Zodiacs" Set 3, No. KW148021, $19.95. B-24H *Gemini* D 252490, *Scorpio* J 252762. From Kits-World.

1/72 SCALE KITS

F-100F Super Sabre, No. 1650, $34.95. From Trumpeter, available from Stevens International.

Spitfire Mk.I and Messerschmitt Bf 109E "Battle of Britain," No. 01909, $42.99. From Hasegawa, available from Great Planes Model Distributors.

F-22A Raptor, No. 722222, $49.95. Look for a detailed review on Page 64. From Fujimi, available from Dragon Models USA Inc.

Eurocopter EC635 Military, No. 04647, $16.95. From Revell AG/Revell Germany.

1/72 DECAL SETS

B-24s of the 486th Bomb Group - Phil Brinkman's "Zodiacs" Set 1, No. KW172017, $19.95. Leo Version 1 and 2, *Gemini, Capricorn, Libra,* and *Scorpio*; **B24s of the 486th Bomb Group - Phil Brinkman's "Zodiacs" Set 2,** No. KW172018, $19.95. *Virgo, Sagittarius, Aquaria, Aries, Cancer, Pisces.* From Kits-World.

1/144 SCALE KITS

A-4F Skyhawk *Lady Jessie,* No. PD-19-1500, $18.95. 2 kits in a box. From Platz, available from Dragon Models USA Inc.

ARMOR

1/35 SCALE KITS

M1133 Stryker medical evacuation vehicle (MEV), No. 1559, $49.95. Includes markings for U.S. Army. From Trumpeter, available from Stevens International.

WWII German Army Kanonen (cannon) and Flakwagen armored anti-aircraft railcar, No. 1511, $119.05. New tooling. Look for a detailed review in an upcoming issue of *FSM*. From Trumpeter, available from Stevens International.

Israeli M50 Super Sherman, No. 9122, $29.95. Plus bonus Israeli paratroopers. From Cyber-hobby.com, available from Dragon Models USA Inc.

Panzerjäger IB mit 7.5cm StuK 40 L/48, No. 6673, $43.95. From Cyber-hobby.com, from Dragon Models USA Inc.

SdKfz 167 StuG IV Early Production with Zimmerit, No. 6576, $49.95. 1939-1945 series. Look for a detailed review in an upcoming issue of *FSM*. From Dragon, available from Dragon Models USA Inc.

Panzerfähre Gepanzerter Landwasserschlepper (Prototype Nr.1), No. 6625, $49.95. 1939-1945 series, Smart Kit. Look for a detailed review in an upcoming issue of *FSM*. From Dragon, available from Dragon Models USA Inc.

Panzerfähre Gepanzerter Landwasserschlepper (Prototype Nr.11), No. 6669, $59.95. 1939-1945 series, Smart Kit. From Dragon, available from Dragon Models USA Inc.

German sWS with 2cm Flakvierling, No. L3525, $52.95. From Great Wall Hobby, available from Dragon Models USA Inc.

New Products

German s.10cm Kanone 18, No. 6411, $41.95. 1939-1945 series, Smart Kit. From Dragon, available from Dragon Models USA Inc.

Sturmgeschütz III Ausf G Finnish Army, No. 35310, $40. From Tamiya America, Inc.

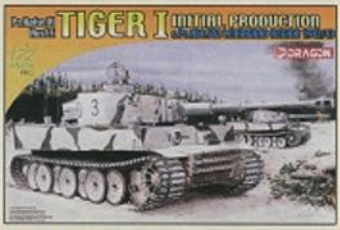
M48A2 Patton tank, No. 85-7853, $22.95. From Monogram, available from Revell.

7.5cm PaK 40/4 auf RSO, No. 6640, $45.95. 1939-1945 series, Smart Kit. Look for a detailed review in an upcoming issue of *FSM*. From Dragon, available from Dragon Models USA Inc.

1/35 DETAIL SETS

WWII German Rheinmetall 12.8cm K44L/55 upgrade set, No. L3523T, $28.95. From Great Wall Hobby, available from Dragon Models USA Inc.

1/72 SCALE KITS



Tiger I (PzKpfw VI) Ausf E initial production sPzAbt 502 Leningrad Region 1942/43, No. 7376, $19.95. From Dragon, available from Dragon Models USA Inc.

SHIPS

1/350 SCALE KITS

USS *Benson* DD-421 1945, No. 1032, $42.95. *Benson*-class Destroyer, Modern Sea Power Series, Smart Kit. From Dragon, available from Dragon Models USA Inc.

1/700 SCALE KITS

Battleship *Tirpitz,* No. 05099, $36.72. Look for a detailed review in an upcoming issue of *FSM*. From Revell AG/Revell Germany.

Project 2380 *Steregushchy*-class Corvette, No. GM700-01, $32. Resin kit includes waterslide decals and brass photoetch. From Gwylan Models.

1/700 DETAIL SETS

Anchor and Chrysanthemum crest set, No. WA12, $17.95. From FineMolds, available from Dragon Models USA Inc.

Radial boat davit set for IJN destroyer, No. WA11, $17.95. From FineMolds, available from Dragon Models USA Inc.

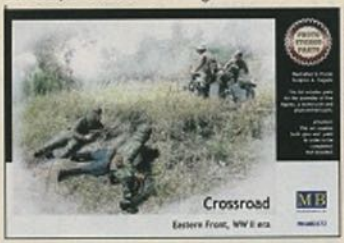
USN aircraft securing rail, No. R7078, $6.95. From Lion Roar, available from Dragon Models USA Inc.

USN boat davits and accessories, No. R7077, $6.95. From Lion Roar, available from Dragon Models USA Inc.

MILITARY FIGURES

1/35 SCALE KITS

Counterattack (Soviet Infanty, Summer 1941), No. MB3563, $17.95. From Master Box Ltd., available from Dragon Models USA



Crossroad (Eastern front, WWII), No. MB3572, $37.95. From Master Box Ltd., available from Dragon Models USA Inc.

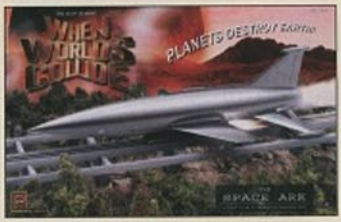
FIGURES, OTHER

1/20 SCALE KITS

Pit crew A set, No. 112442, $28.95. From Fujimi, available from Dragon Models USA Inc.

SCIENCE FICTION

1/350 SCALE KITS



The Space Ark, No. 9011, $25.99. From Sci-Fi Classic "When Worlds Collide." Look for a detailed review in an upcoming issue of *FSM*. From Pegasus Hobbies.

OTHER SCALE KITS

Republic Attack Shuttle, No. 06672, $35.52. Star Wars Easy Kit. From Revell AG/ Revell Germany.

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A detailed examination of filming models from the movie *2010: The Year We Make Contact*. Author Jean-Marc Deschamps was given access to the models as they were being restored for auction. He took hundreds of photos of them which, when combined with period photos of the movie's production, form a complete record of the models from this film.

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New Products

Battlestar *Galactica*, No. 915, $44.99. 1/4105 scale. Look for a detailed review in an upcoming issue of *FSM*. From Moebius Models.

All Terrain Tactical Enforcer (AT-TE), No. 06673, $34.05. Star Wars Easy Kit. From Revell AG/Revell Germany.

AUTOS

1/20 SCALE KITS

Williams FW14B Britain Grand Prix 1992, No. 090528, $59.95. From Fujimi, available from Dragon Models USA Inc.

Williams FW16 San Marino Grand Prix 1994, No. 090580, $69.95. From Fujimi, available from Dragon Models USA Inc.

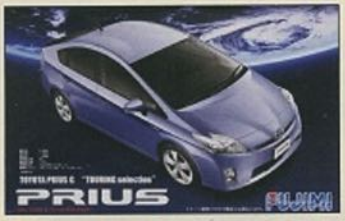
McLaren Honda MP4/5 Monaco Grand Prix 1989, No. 090573, $59.95. From Fujimi, available from Dragon Models USA Inc.

1/24 SCALE KITS

Audi A4 DTM 2009 "Timo Scheider," No. 07176, $41.45. From Revell AG/Revell Germany.

Salzgitter AMC Mercedes C-Klasse DTM 2009 "Gary Paffett," No. 07127, $41.45. From Revell AG/Revell Germany.

Trilux AMG Mercedes C-Klasse DTM 2009 "Ralf Schumacher," No. 07128, $41.45. From Revell AG/Revell Germany.



Toyota Prius G "Touring Selection," No. 038223, $36.95. From Fujimi, available from Dragon Models USA Inc.

500 Abarth, No. 123721, $44.95. From Fujimi, available from Dragon Models USA Inc.

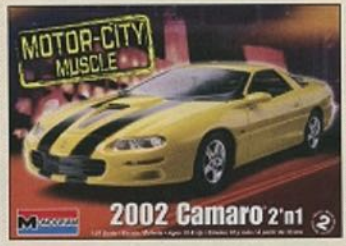
Abarth 695, No. 123844, $49.95. From Fujimi, available from Dragon Models USA Inc.

458 Italia, No. 123820, $49.95. From Fujimi, available from Dragon Models USA Inc.

1/25 SCALE KITS

Kurtis Midget Racer Edelbrock Equipped V-8/60 with trailer, No. 85-4249, $24.94. From Revell.

1959 Ford Galaxie Skyliner with retractable top, No. 85-7162, $23.49. Clear windshield and rear window, chrome bumpers, grille, wheel disks. From Revell.



2002 Camaro 2 n' 1, No. 85-4273, $22.95. Motor City Muscle. From Revell.

www.FineScale.com

featuring reviews, product information, photo galleries, and more!

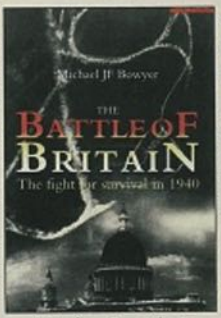
MISCELLANEOUS

Plasterplatz (flexible cobblestone), No. 57218. Check website for price and ordering information. From Noch GmbH & Co. KG.

BOOKSHELF

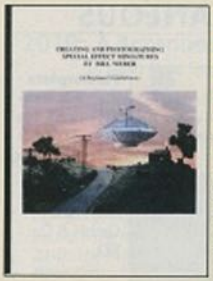
How to Build Championship Scale Vehicles (Construction Considertions for Building Championship-Caliber Models), free download PDF a www.gslchamptionship.org/Library/library.html, CD available for $7, hard copy $30, by Mark Gustavson, soft cover, 155 pages, all black-and-white photos. From International Model Car Buiders' Museum.

How To Make a Model of Your Own Home, $14.95, by Bill Weber, soft cover, 60 pages, all black-and-white photos. From Bill Weber Books & Cards.

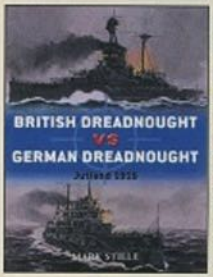


The Battle of Britain - The Fight for Survival in 1940, $18.95, by Michael JF Bowyer, soft cover, 240 pages, more than 120 black-and-white photos, ISBN: 978-0-85979-147-2. From Crecy Publishing, available from Specialty Press.

New Products



Creating and Photographing Special Effect Miniatures - A Beginner's Guidebook, $14.95, by Bill Weber, soft cover, 32 pages, all black-and-white photos. From Bill Weber Books & Cards.

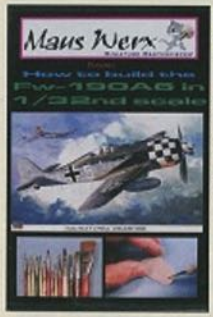


British Dreadnought vs German Dreadnought Jutland 1916, $17.95, by Mark Stille, soft cover, 80 pages, all black-and-white photos, ISBN: 978-18-4908-1672. From Osprey Publishing.

Repairing the Panzers – German tank maintenance in World War 2, $54.95, by Lukas Friedli, hard cover, 256 pages, 291 black-and-white photos, includes drawings, diagrams, maps, tables and charts. ISBN: 978-0984-18202-2. From Panzerwrecks.

US Navy Phantoms: Atlantic and Pacific Fleet Units 1960-2004, $55.98, by Patrick Martin, Andreas Klein with Roland Gakenholz, hard cover, 160 pages, 28 color profiles, color photos, 350 unpublished photos, unit insignia and patches. ISBN: 978-3-935687-83-6. From Double Ugly Books.

ELECTRONIC MEDIA



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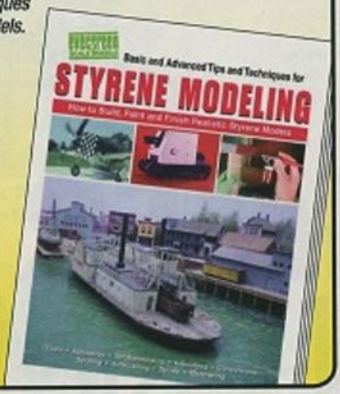

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As well as creating a good foundation for paint, primer can reveal and fill minor blemishes, start the weathering process, and cover troublesome colors and materials.

A PRIMER ON PRIMER

A good finish is all in the beginning • BY AARON SKINNER

AIRBRUSHING & FINISHING

Anyone who has painted a full-size car or a plank of bare wood knows the value of primer; it smoothes out the surface and gives the color coats something to hold onto.

The same is true of models; the secret of a great-looking paint job is to start with a good surface.

But ask a group of modelers whether or not they prime and they'll tell you never, every time, or that it depends on the model.

What is primer?

When modelers talk about priming, they may be referring to a ready-mixed primer or simply referring to a base coat of paint that they've applied to a model.

Generally speaking, primers are special paints designed to promote paint adhesion and coverage, especially on porous surfaces. "But wait," I hear you say, "Styrene isn't usually porous." That's true. But paint will stick better to primer than to smooth plastic, especially when you are using acrylic paints.

Some primers are a little thicker than standard paint so they will fill minor scratches and other blemishes left from construction and/or sanding.

There are a lot of primers on the market from major hobby manufacturers, especially for scale models, **1**. Alternatively, some spray-can primers sold for household or automotive use can be used, **2**. Most of these are light gray or white. If your main reason for priming is to provide a uniform base, rather than to fill scratches, you can use standard paint. In these instances I use neutral gray or dark brown, depending on the subject.

How to prime

Primer is applied like any other paint. To ensure a smooth coat, use either spray-can paint or an airbrush. My favorite is Tamiya Surface Primer in the spray can; it goes on super smooth, and I haven't had any problems using enamels or acrylics over it, **3**. I've also had nice results with Gunze's Mr. Surfacer and Vallejo's acrylic-urethane primers. As with any paint, experiment until you are comfortable with one or two brands for different effects or surfaces.

Use spray-can primer as you would any other spray can: Keep the can 6" from the surface, start and end each stroke off the model, and keep the can moving. I have decanted Tamiya primer before and applied it with an airbrush, but the results straight from the can are smoother, **4**.

If you are spraying primer or paint through an airbrush, thin with the recommended thinner.

1

Most model-paint manufacturers make primer, including (from left) Vallejo, Model Master Acryl, Badger Modelflex, Tamiya, Gunze Sangyo, Model Master, and Polly Scale. They are more expensive than what you get at the hardware or discount store, but ready to use on plastic.

2

Some modelers prefer household or automotive primers. They are generally cheaper than scale modeling primer, but test them first. Some can aggressively attack plastic.

3

Aaron's preferred base coat is Tamiya Surface primer in the spray can. It's a little more expensive, but almost foolproof.

4

Aaron sprays Tamiya primer on AZ Models' 1/144 scale Douglas DC-9.

Surface Prep

Equally as important as primer for a great finish is making sure the surface is ready to receive paint. In addition to sanding away mold seams and excess filler, I usually lightly rub the surface with 2,000-grit sandpaper or even a piece of soft cloth, like an old T-shirt, to knock off any little lumps.

I always wash the parts in a weak solution of dish detergent, **A**, then leave them to air-dry. If speed is an important consideration, a hair-dryer can help. But make sure the water is completely gone from the model, including any that may be hiding in corners or interiors; nothing ruins a surface faster than water trickling across wet paint.

Finally, shortly before painting, I apply Polly S Plastic Prep with a cloth, cotton ball, or cotton swab to remove any lingering oil or grease from the surface, **B**. Allow it to air dry, then paint.

A

Aaron washes the AZ Models DC-9 in mildly soapy water to remove sanding residue as well as finger oil and mold-release agent that could interfere with paint adhesion.

B

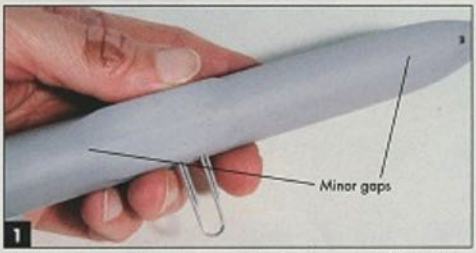
A rubdown with Polly Scale Plastic Prep ensures primer will stick.

(continued)

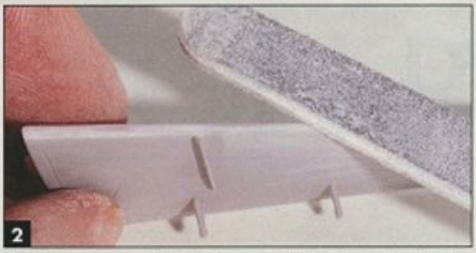
WHY PRIME?

Check for surface problems

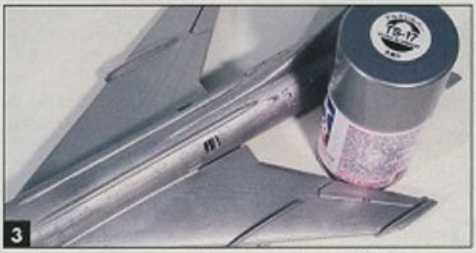
The most common reason given for priming by *FSM* authors is to expose surface flaws. A uniform coat of white or light gray can highlight unfilled gaps, ejector-pin marks, or scratches. In any case, the aim is a smooth, uniform coat covering the entire surface. If, after the first pass, you discover blemishes, **1**, correct them with filler and sanding, **2**, then respray the affected areas. You're done when the model's surface is smooth and clean. Some modelers like priming with silver because metallic paints make surface problems even more obvious, **3**.



The first primer coat revealed a couple of under-sanded filler blobs on the DC-9's belly and a small gap near the nose.



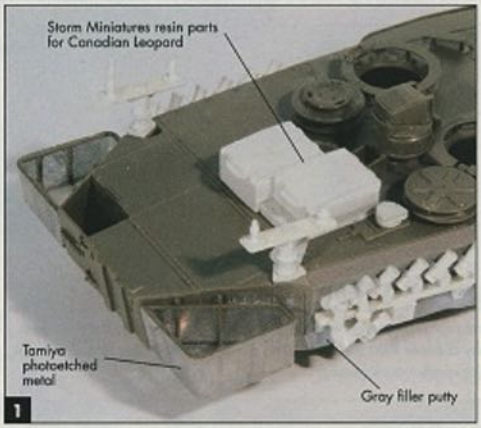
The primer also revealed that Aaron hadn't been thorough when he sanded the leading edge of one wing. When the primer line disappears, the gap is smooth.



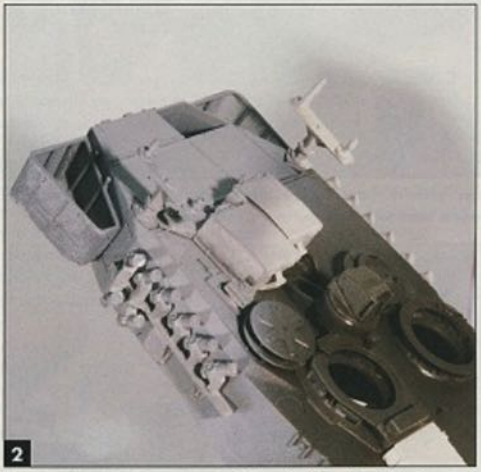
Tamiya gloss aluminum reveals panel lines that need to be repaired on the spine of Eduard's 1/48 scale Su-7 Fitter.

Provide a uniform color base

If your model has contrasting colors of plastic or contains resin or metal, **1**, applying primer evens out the base so subsequent color coats look uniform, **2**. The primer also gives the paint something to "bite" into, and it helps paint adhere to metal.



Primer is essential when preparing to paint multimedia models like this Tamiya 1/35 scale Leopard 2A6 with photoetched-metal baskets and Storm Miniatures resin details.



Tamiya gray primer covers resin, photoetched metal, and dark green styrene, producing a uniform finish that is ideal to paint over.

Add depth

A lot of armor builders use a dark primer, such as a black or dark brown, **1**. The dark base remains in recesses and low spots, helping to create depth in details and add the illusion of shadows overall, **2**.

1

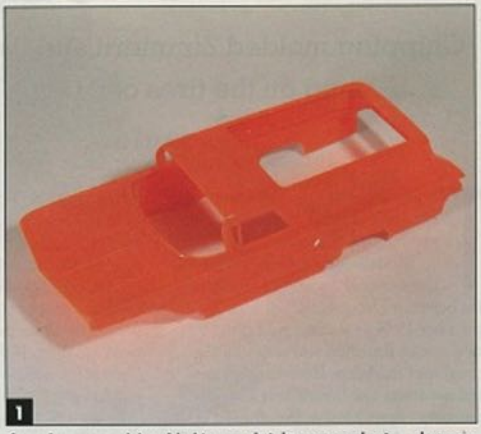
In addition to revealing unfilled gaps and glue blobs, dark primer produces depth and shadows to start the weathering process.

2

When airbrushing camouflage over the dark primer, Aaron doesn't have to put as much paint into recesses and under fenders. The dark shade replicates natural shadows.

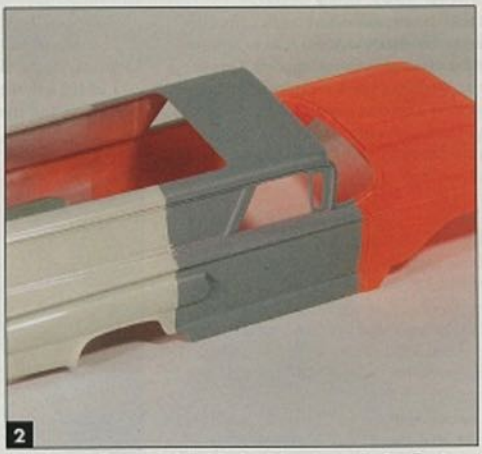
Help difficult colors

This is less of an issue than it once was, but if a model's plastic is unusually bright or dark, **1**, priming can cover it and make applying lighter colors easier, **2**. Some builders even apply sealer — thick, opaque paint — to prevent color from bleeding through.



1

If you have a model molded in, say, bright orange plastic — but you want to paint it white — then primer is your friend.



2

The primer will cover and seal the brightly colored plastic, allowing color on the new body to appear true. FSM

King-sized weath

| COVER STORY |

Chipping molded Zimmerit and getting a little mud on the tires of Dragon's kit

BY KARL LOGAN

Thrilled describes my reaction to Dragon's German armor kits with pre-molded Zimmerit.

Modeling Zimmerit, a plaster-like material applied to German tanks between December 1943 and September 1944 to counter magnetic mines, can be daunting and intimidating for beginner modelers. Even for experienced modelers like myself, it is a time-consuming chore; I know, I've dressed up plenty of models with a razor-saw blade and putty. The new kits allow newbies and old pros alike to build an accurate, "Zimmed" panzer over a weekend.

Critics of molded Zimmerit complain that standardization could lead to a proliferation of "cookie cutter" models. One of the enjoyable options is showing damage typical of a veteran tank. I set out to prove you could take a pre-Zimmed kit and, with a little creativity and the right tools, produce a uniquely chipped and battle-weary survivor.

Where the chips fall

I chose Dragon's King Tiger with Henschel turret and Zimmerit. The nicely molded kit goes together beautifully; you have the choice of several of the same parts in plastic and metal. I used the plastic towing lugs and gun barrel, figuring paint would adhere better.

I assembled the hull's major components before attacking the Zimmerit, but I left the turret unbuilt.

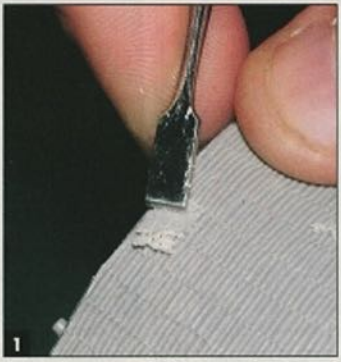
Using a combination of micro chisels, **1**, and a No. 10 blade, **2**, I chipped and damaged the Zimmerit on each of the major components before adding fine detail. I tried to keep the damage asymmetrical, keeping in mind the areas that would most likely receive chips and scrapes.

An application of Testors liquid cement softened the scrape marks; I added Squadron putty where the gouges went too deep. If there's one drawback to Dragon Zimmerit, it is that some of it is molded pretty deep. This means removing quite a bit of plastic to get a smooth surface, leaving a slightly out-of-scale appearance.

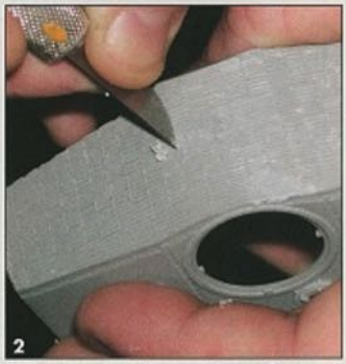
Next I added the tools, replacing the kit's workable photoetched-metal clasps — microscopic assemblies that require at least three hands to build — with simpler LionRoar items, **3**.

I added a thin copper-wire handle to the jack block, and styrene-rod lifting lugs to both sides of the muffler guards. I also filled the space for the mudguard on the right rear sponson because I planned to leave it off as if it had been damaged, **4**.

Before adding the kit's photoetched-metal engine grilles, I needed to curve the



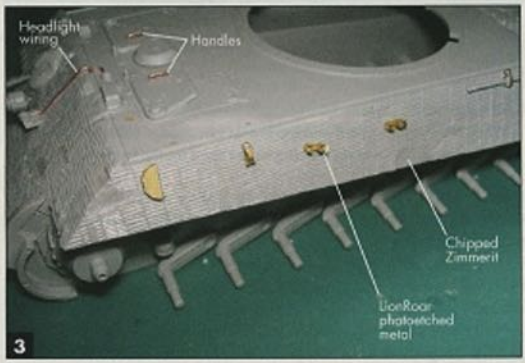
Karl carves away molded Zimmerit from the King Tiger's turret with a miniature chisel.



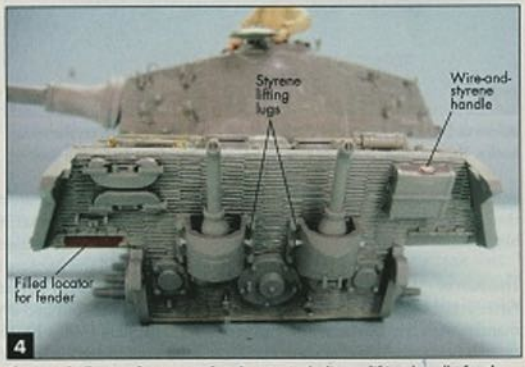
For larger areas, Karl scrapes the tip of a No. 10 blade side-to-side.

ering for a Tiger II

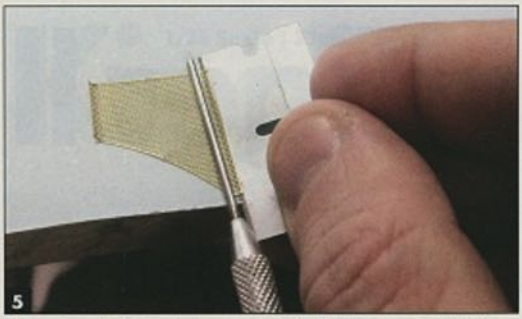
Damaged Zimmerit, mud, and snow add a lot of detail to Karl's King Tiger. He used Dragon's 1/35 scale kit to model a 1st SS Panzer Korps tank outside Budapest in January 1945.



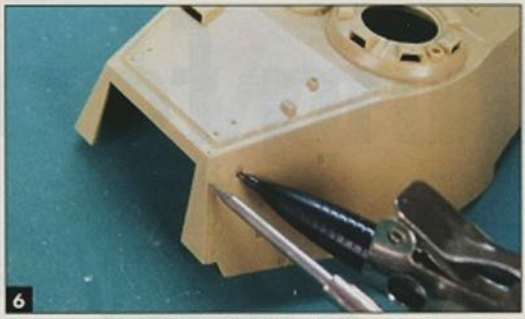
Karl added LionRoar photoetched-metal tool brackets along with copper-wire handles and electrical conduits.



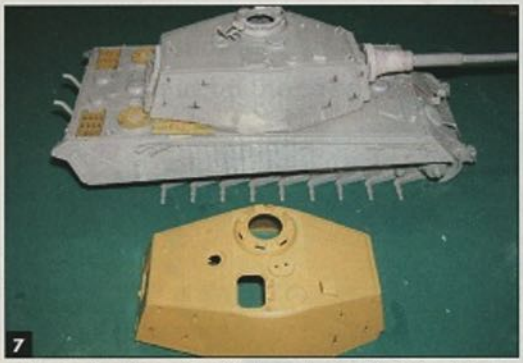
The rear hull got a few extra details, too, including a lifting handle for the jack block and lifting lugs on the muffler guards.



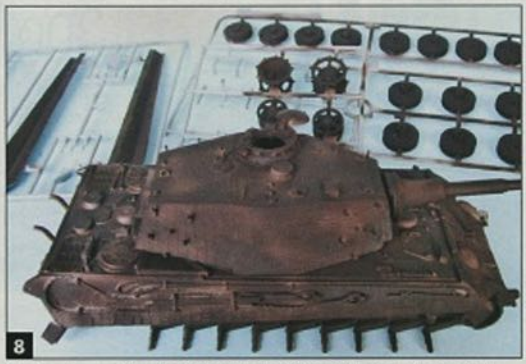
Finding just what he needed among his tools, Karl uses a razor blade to bend the kit's photoetched-metal grilles around the shaft of a metal pick.



Not discouraged by a lack of locators for track racks on the kit turret, Karl uses a compass to measure the locations on a Tamiya King Tiger turret ...

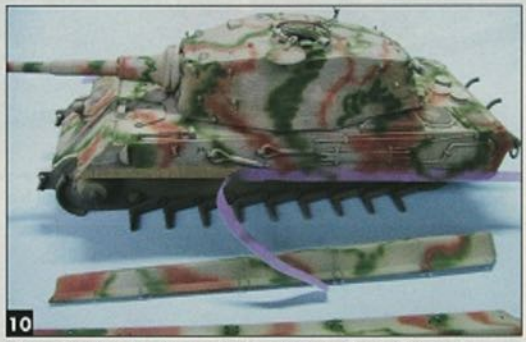


... then transfers those marks to the Dragon turret. All he had to do then was glue the kit parts in place.



To prime the model and add depth to the finish, Karl airbrushed a dark brown mix of Tamiya acrylics, concentrating on shadowy areas.

Before airbrushing faded dark yellow, Karl hung spare tracks on the turret hooks. They masked the base coat, reinforcing the idea of age and use.



After airbrushing the green and red brown camouflage colors, Karl removes the mask covering the attachment point for the fenders.

ends. I placed a round pick where I wanted the bend, then slipped a straight-edge razor blade under the end, **5**.

The turret

After attaching the barrel, I textured the mantlet with Mr. Surfacer 500 and replicated a horizontal casting seam on the mantlet sides with Squadron putty.

Next came the annoyance of determining locations for spare-track hangers on the turret. The instructions essentially say to eyeball the locations for the spare tracks, and add the hangers after the tracks are attached. That's great if you want to add all eight sets, but bad if you want to leave some hangers empty. I took out the guesswork by measuring the locations of the hangers on a Tamiya kit, figuring the dimensions would be similar, **6** and **7**.

Painting

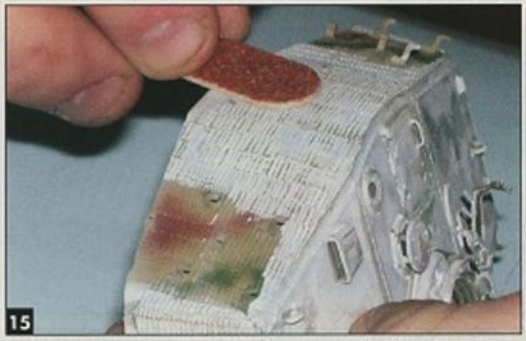
I wanted to model a King Tiger of Jochen Peiper's 1st SS Panzer Korps during Operation South Wind, the attack on the Soviet bridgehead on the western bank of the Gran River in Hungary. I found a photo in *SS Armor on the Eastern Front*, by Velimir Vuksic, of tank No. 300 as it appeared about 45 miles from Budapest, wearing winter whitewash camouflage.

With the camouflage protected under a layer of hairspray, Karl paints a sloppy layer of white craft acrylic over the model.

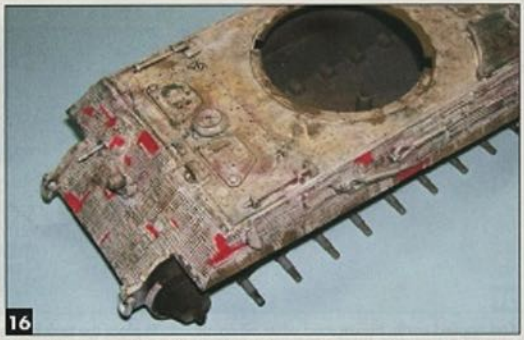
Figuring the spare track links were on the turret when the tank was whitewashed, Karl did the same.

Karl scrubs away part of the whitewash with water and an old paintbrush.

Using a metal pick, Karl gently scratches the whitewash to replicate minor wear.



Karl employs an emery board to knock whitewash from the ridges of the Zimmerit.



Zimmerit was applied at the factory before painting, so chips will show red oxide primer. Karl painted his chips with primer red oil paint.

I started with a loose, pre-shading coat of dark brown mixed from Tamiya acrylic black (No. XF-1), flat earth (No. XF-52), and red brown (No. XF-64), **8**. Then, I shot a base coat of Tamiya dark yellow (No. XF-60), concentrating on the upper surfaces of the model and leaving the darker color under the sponsons and around the suspension to reinforce the illusions of shadow and depth.

I wanted to portray an unfaded base coat under missing fender sections, as well as around missing spare track links on the turret, so I taped off the fender sections and placed the spare tracks on the hangers before shooting a 4:1 mix of white (No. XF-2) and dark yellow, concentrating again on upper surfaces. When I removed the spare links, the unfaded base coat looked great, **9**.

I left the tape on the fender attachment areas to keep that area free of the red-brown and green camouflage to come; I wanted the model to look like a tank that had lost parts of the fenders since being camouflaged in the field, as was the case for many German armored vehicles.

I painted the standard German camo with Tamiya red brown and dark green (No. XF-61), **10**.

17

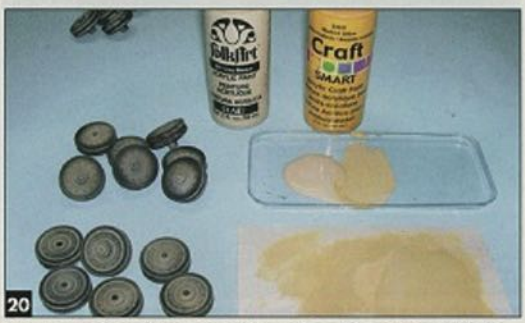
To modulate the surface colors, Karl added oil washes and dots of oil paint. The earth colors aged and weathered the surface; the other colors look like faded camouflage.

18

To tone down the contrast of the primer red chips, Karl applied tan, yellow, and white acrylic paints.

19

Karl skipped straight to faded dark yellow to paint the road wheels.



20

A dry-brushed mix of beige and yellow craft acrylics produces highlights on the running gear.

21

Karl applied earth, brown, and white oil paints to the running gear to begin weathering.

22

To place the tank in a winter wonderland, Karl whitewashed the tracks to hint at snow embedded in the links.

Whitewash

Before adding the whitewash, I sprayed the model with a quick coat of Aqua Net hairspray. I wanted worn whitewash, so I slopped on Folk Art white acrylic paint with a soft brush, the same way I imagined it would have been done in the field, **11**. I placed some of the spare track links on the turret before this to simulate the idea that the tank had been whitewashed in the field before some links had been used, **12**.

With the whitewash barely dry, I dipped an old, stiff brush in water, then scrubbed and scratched away areas of paint, **13**. I also used a metal pick, **14**, and even dragged an emery board across the top of the Zimmerit to add fine scratches, **15**. I worked carefully to not overdo it, concentrating on areas like the engine deck and turret top where crew would have walked.

To grime up the whitewash, I applied Mig Productions neutral wash (No. P222) to the entire model and let it dry. This is a perfect color for a nice layer of "aging."

Chips and color modulation

I painted the areas of chipped Zimmerit with Mig Productions 502 Abteilung primer red oil paint (No. ABT120), **16**. This line of oil paints features colors tailored to armor modeling. The red looks bright, but it's pretty close to what I've seen on an unrestored StuG III at Fort Knox.

After rust-colored washes, Karl added signs of recent wear to the tracks by dry-brushing dark and light metallic paints.

Recipe for mud (clockwise from left): pigments, dirt, plaster, bits of vegetation, and acrylic resin.

Karl throws a lot of mud up under the fenders and running gear – just like a full-size King Tiger.

Dark, wet, fresh mud follows the lighter dry stuff. Layered weathering gives models a sense of time and wear.

To add depth, variety, and highlights to the whitewash, I tried a bit of color modulation using filters and washes. I started with Mig's Sin Industries "gray for bright white" filter (No. P404) — a very thin enamel mix — applying big, irregular drops to the whitewash. I added a spotty layer of thinned snow white oil paint (ABT001), then a light application of Mig's brown for white/yellow filter (No. P406).

While the white layer was drying, I added dots of 592 Abteilung oil paints — wash brown (No. ABT080), basic earth (No. ABT093), Luftwaffe yellow (No. ABT010), faded green (No. ABT040), and buff (No. ABT035) — and blended them in with thinner to give additional tints and hues, **17**.

The results were beyond my expectations: The whitewash now had rich chromatic textures, and the model looked like more than a white panzer. The patches of yellow, green, and buff looked like altered hues of the camouflage, while the white, earth, and brown aged and unified the look.

To tone down and age some of the exposed primer, I applied Mig's Gulf War sand (No. P037) powdered pigment to the still-wet oil. Then, I stippled on a combination of tan, yellow, and white acrylic craft paint, mixed on the brush. I left some unaltered to depict newer chips, **18**.

I applied decals over a little clear gloss, using Solvaset to settle them into the Zimmerit's deep grooves.

Wheels and tracks

I assembled the individual-link tracks on a piece of masking tape, then coated them with Testors liquid cement. After an hour, I formed them around wheels and left them overnight. The wheels and tracks are then carefully removed from the hull for painting and weathering.

After priming the tracks and wheels with dark brown acrylics, I airbrushed the wheel centers using a lightened dark yellow, **19**.

I mixed craft paints — Folk Art clay beige and Craft Smart mustard yellow — and dry-brushed the wheels to highlight detail, **20**. Washes of Mig 502 Abteilung oils — basic earth, wash brown, and snow white — followed, **21**.

I whitewashed the tracks as I had the hull to simulate snow pressed into the links' faces, **22**. After applying a wash of 502 Abteilung light rust brown (No. ABT060), I dry-brushed a heavy coat of metallic gray on outer surfaces and inside where the metal road wheels make contact. Lightly dry-brushing silver gave the tracks an old but well-used appearance, **23**.

Playing in the mud

I wanted to use Mig pigments and acrylic resin to get the big tank appropriately dirty, and aimed for two layers: light, dry mud first, then a darker, wet layer.

First, I stippled a layer of craft acrylics — dark brown and light tan mixed on the brush — over the lower hull. I'm not sure this was necessary, but it's a remnant of my tried-and-true weathering method.

For older mud, I mixed equal parts light dust (No. P027) and dry mud Mig powder (No. P232), then mixed it to this recipe: 30 percent pigment, 30 percent plaster, 30 percent Mig acrylic resin (No. P032), and 10 percent real dirt and bits of vegetation, **24**. Using a mid-size brush, I slopped the mud onto the hull, **25**.

For fresh mud, I added Mig Russian earth powder (No. P034) to darken the mix,

SOURCES

King Tiger kit (No. 6303), Dragon, from Dragon Models USA, 626-968-0322, www.dragonmodelsusa.com

Commander figure, Warriors, Waffen SS Winter Tiger I Crew (No.35228); Squadron Mail Order, 877-414-0434, www.squadron.com

Miniature chisels, (No. 83253), Micro-Mark, 800-225-1066, www.micromark.com

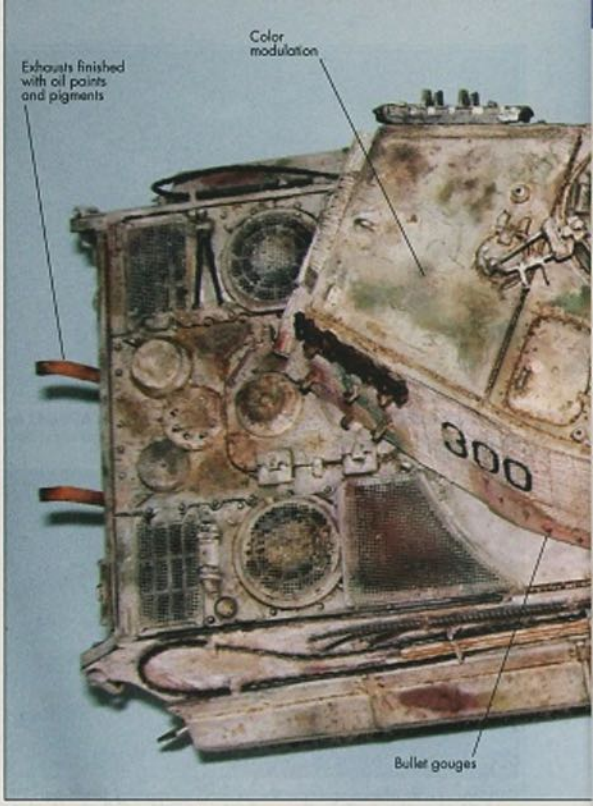
Solvaset, Walthers (No. 904-470), 800-487-2467, www.walthers.com

Pigments, acrylic resin, washes, filters, thinner, and fixer, Mig Productions, www.migproductions.com, from Mig Productions USA, www.migproductions-usa.com

Oil paints, 502 Abteilung, Mig Productions

REFERENCES

SS Armor on the Eastern Front, Velimir Vuksic, J.J. Fedorowicz, ISBN 978-0-921991-86-1



27

Karl wipes excess mud from the tracks with a handy tool – his thumb.

28

Turning to model railroad supplies, Karl sprinkles Woodland Scenics snow into the running gear.

29

To add a little snow kicked up on the tracks, Karl applies Mig Productions ashes white pigment with pigment fixer.

and Model Master Acryl clear gloss (No. 4638) to give it a wet sheen, **26**.

After applying mud to the tracks, I wiped excess off with my thumb to show highlights, **27**.

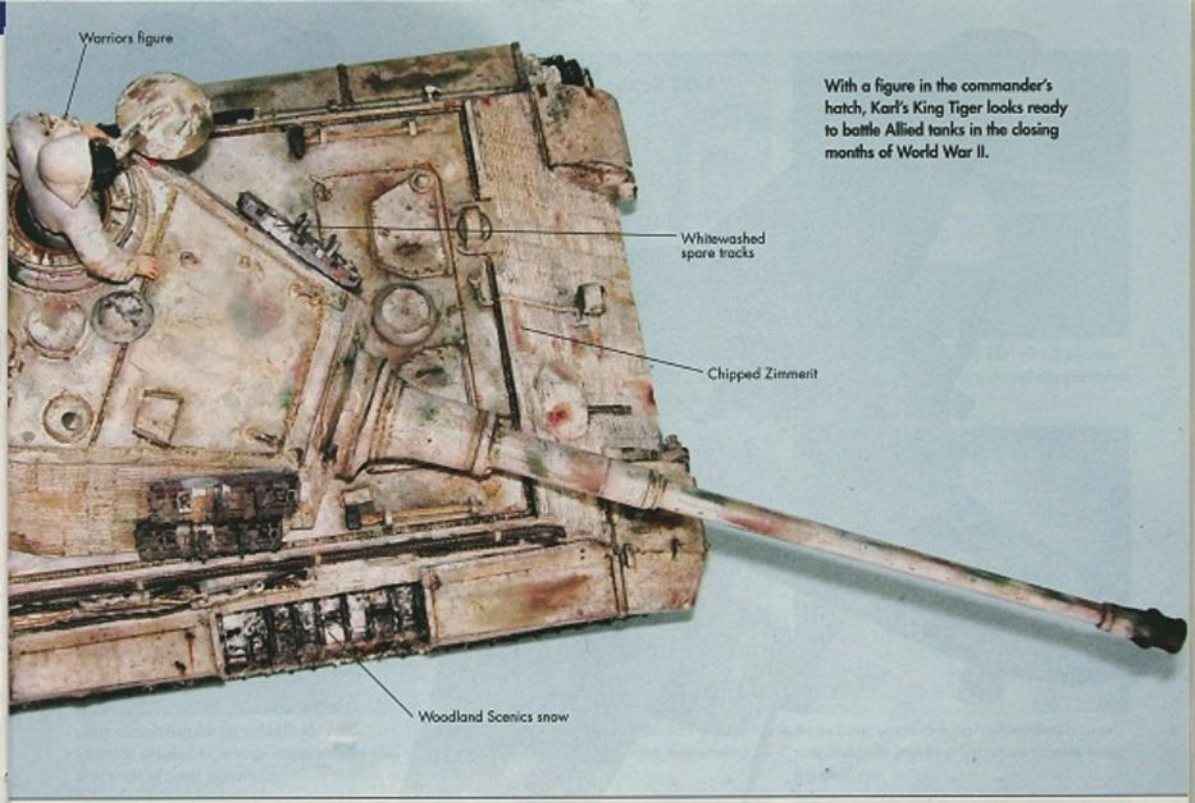
I carefully attached the wheels, tracks, and fenders, then splashed more wet mud on the hull and track faces.

Finally, to modeling the big Tiger dashing through the snow, I added Woodland Scenics Snow (No. SN140), shaken from a cup, to the hull and tracks, **28**. Once the wheels and tracks were in place, I added a little extra snow to the running gear with Mig's ashes white pigment (No. P022), locking it in place with Mig pigment fixer (No. P249), **29**.

It took several applications of snow, mud, and pigments to achieve the desired appearance. I find it pays to add a little at a time, step away from the model for a few hours, then look at it again. When you come back to it at least twice and say, "OK, that looks great!" then you can be reasonably sure that you've achieved the look you wanted. The best-weathered finishes are never rushed.

Exhaustive effort

I painted the tools with a mix of Tamiya metallic gray and black, then applied an oil wash of dark rust (No. ABT070) and dry-brushed steel. The handles were painted tan, washed with medium brown, and given a wood grain finish by carefully painting with a fine brush. Next, I whitewashed



With a figure in the commander's hatch, Karl's King Tiger looks ready to battle Allied tanks in the closing months of World War II.

Karl dips a brush in oil paint, then uses it to pick up rust-colored pigment powder to add to the tank's exhausts.

After adding a couple more rust shades, Karl finishes with a little soot on the tips of the exhaust pipes.

some of the tools as if they had been on the tank when it was camouflaged.

Panzer exhausts mark a modeler's skill; some of the variations I've seen on rusted, beat-up mufflers are pure art! I picked up some light rust brown oil paint on a brush, then dipped the bristles in old rust pigment (No. P230) to give the pipes a base coat of rust, **30**.

I scraped away excess color with a clean, short-bristled brush, leaving more rust near the pipe opening. While the oil/pigment was sticky, I applied medium rust pigment to the upper end of the pipe, and light rust pigment to the sides.

A little black smoke powder at the tip finished the job, **31**.

I came to wish that I hadn't modeled the large chip of missing Zimmerit on the side of the turret. To justify it, I added bullet marks to the surface. Continuing the theme to the hull, I thinned the back of the fender with a motor tool, then carefully poked some holes through it with a No. 11 blade.

Final assault

A pinwash with Mig's neutral wash added depth to weld seams and panel lines. I used oils to add rust streaks and discolorations to the surface; a light application of pigments on the upper hull added dirt and grime. Finally, I rubbed Mig gunmetal powder (No. P231) into edges with my finger.

To crew the King Tiger, I placed a commander, bundled up against the cold, in the hatch, painting him with Tamiya and Winsor & Newton acrylics. **FSM**

Carmine's careful painting and weathering techniques give his A-20 a realistic war-weary finish.

Improve an A-20

Build, detail, and weather MPM's A-20G Havoc

BY CARMINE MARI

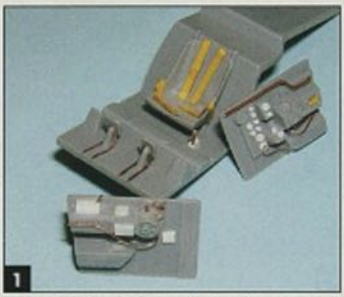
The phrase "warbird" brings to mind a huge variety of images: giant fortress-like aircraft with massive engines. Lumbering weapons filled with bombs and bristling with machine guns. Battleships of the sky.

All of those things are true in most cases, but as a modeler who strives for realism with my projects, I constantly remind myself that even the largest, most powerful warbird is still an aircraft, and an aircraft, by its nature, can only be so durable and heavy beyond a certain point. Their skin isn't armor plate, it's aluminum, and sometimes fabric. There's a delicacy to all aircraft, and I try to represent that in all the models I build.

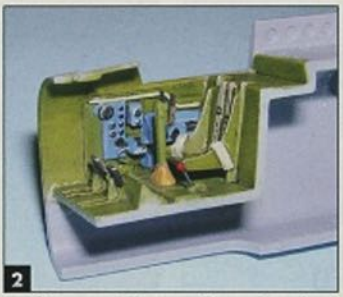
Although they're assembled using the same tools and techniques, there's a gulf between how an aircraft and an armor model should be built and finished. When I decided to build MPM's 1/72 scale Havoc, I really wanted to convey its "lightness." Of course, the twin-engine craft was a lethal weapon powered by two massive Pratt & Whitney radial engines, but I knew I could build the model to represent both its strength as a weapon and its delicacy as an aircraft.

Cockpit

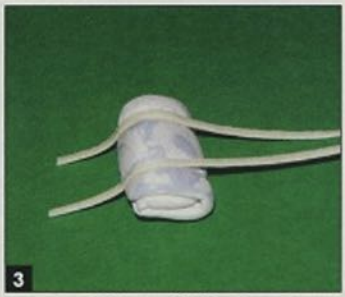
MPM's kit of the Havoc is generally accurate, but it's a little basic and lacking some important details. Starting in the cockpit, I thinned the pilot's seat, then added some lead-foil harnesses. Using my references as a guide, I added some detail to the cockpit sidewalls. Not wanting to rely on the aftermarket for parts, I scratchbuilt most of the



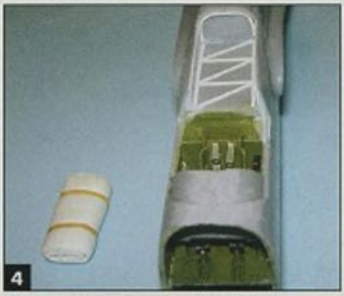
Even in 1/72 scale there's plenty of opportunity to add detail. Carmine scratchbuilt details using wire and styrene stock.



Careful painting helps, too. After applying the overall green finish, Carmine picked out smaller details to break up the monochromatic finish.

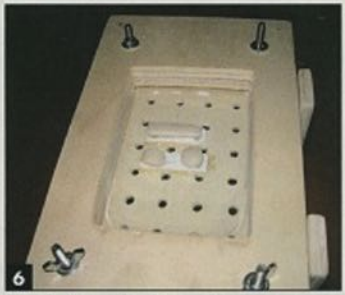


Carmine made the aircraft's life raft out of carefully folded paper. It fits in a dorsal compartment just aft of the cockpit.

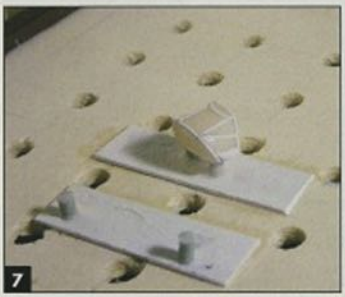


After completing the scratchbuilt life raft, Carmine detailed its storage compartment with thin strips of sheet styrene.

Carmine wasn't satisfied with the kit's clear parts, so he made his own molds to manufacture new parts.

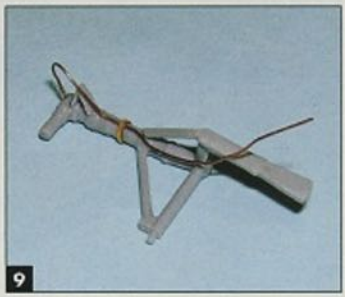


Some basic woodworking and hardware-store nuts and bolts make up Carmine's vacuum-forming platform.



Thin strips of styrene reproduce the delicate canopy framing on the finished vacuum-formed parts.

After studying his references, Carmine beefed up the detail in the main landing-gear wells/engine nacelles using styrene strip and sheet.



Carmine keeps several gauges of copper wire handy for scratchbuilt detail. Here it simulates the main gear's hydraulic brake line.

details I added to the model. A little wire, stretched sprue, and some sheet-styrene bits go a long way toward dressing up the cockpit realistically, **1**. When I was satisfied with the details I added, I airbrushed the interior Humbrol interior green. After picking out some of the parts with different colors, I gave the compartment a dark wash, then dry-brushed the raised details with a tiny bit of yellow paint, **2**.

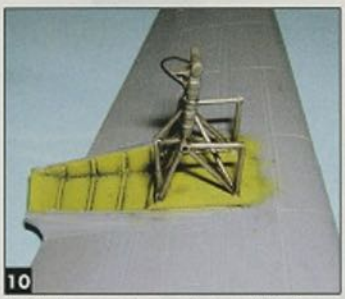
An inflatible life raft was stowed in a compartment directly behind the cockpit. The kit doesn't include this detail, so I made my own by folding up dampened paper, **3**. I brushed on a little thinned white glue to stiffen things up and turned my attention to the raft compartment. To help dress things up I added some styrene strips, **4**. When I was satisfied that the raft was completely dry, I painted it bright yellow.

Canopies

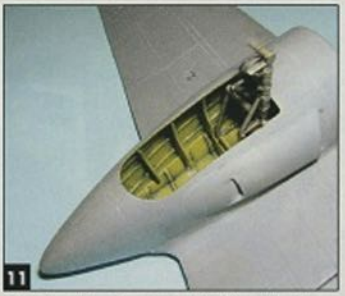
I wasn't thrilled with the clear parts that came with the kit, so I decided to make my own. A while back I made a rudimentary vacuum-forming machine, and this seemed like a good project on which to try it out. I started by making molds of all the clear parts using the kit parts as a guide, **5**. Like a lot of first-time efforts the process involved plenty of trial and error, **6**. I had to add holes to the bed of the vacuum former, and make adjustments to the detail level of my molds, **7**, but in but in the end I was satisfied with the end result.

Landing gear

The landing gear and gear bays in the MPM kit are minimally detailed and

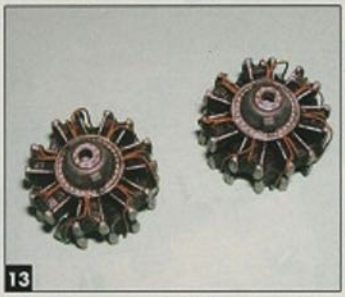


The landing gear is a complex assembly of many delicate parts. Make sure it's strong enough to support the weight of the finished model.



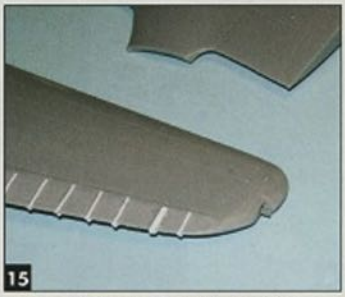
A dark wash and some dry-brushing help draw attention to all the scratchbuilt details Carmine added in the wheel wells.

Carmine dressed up the kit's basic radial engines with ignition wiring and pushrods he made from bits of wire.

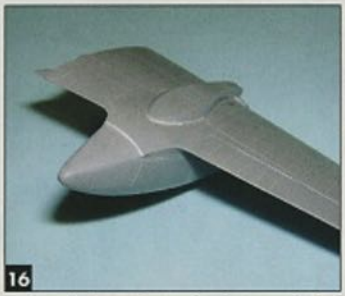


Careful detail painting really brings the engines to life. They're a real focal point of the model, and the extra detail work is really worthwhile.

To frame the freshly detailed engines properly, Carmine thinned the edges of the kit's engine cowlings with careful sanding.



Carmine used more styrene strip to add some texture to the control surfaces. After the glue cured he sanded down the strips considerably.



A relatively-low production kit, the Havoc had several gaps that needed filling, like these on the wing and the engine nacelle.

After painting and decaling his model, Carmine was ready to apply some heavy-duty wear and tear to the finish.

Carmine used artist's oil paint washes – in a surprisingly wide variety of colors – to weather the model.

needed a little help. Inside the main-gear bays I broke out some more styrene strip and sheet to add some detail to the interior walls, **8**. The gear legs needed some work, too. A little copper wire helped simulate the hydraulic brake lines running to the main-gear brakes. This addition is one of my favorites – it adds a lot to the model without requiring a lot of work, **9**.

The Havoc's landing-gear legs are a complex assembly with a lot of little arms. I made sure they were sturdy enough to support the finished model, then installed them on the wing, **10**. Next I installed the engine nacelles (and their gear bays) over the landing-gear legs, **11**. A little wash and some dry-brushing helped draw attention to the scratchbuilt detail I added.

Engines

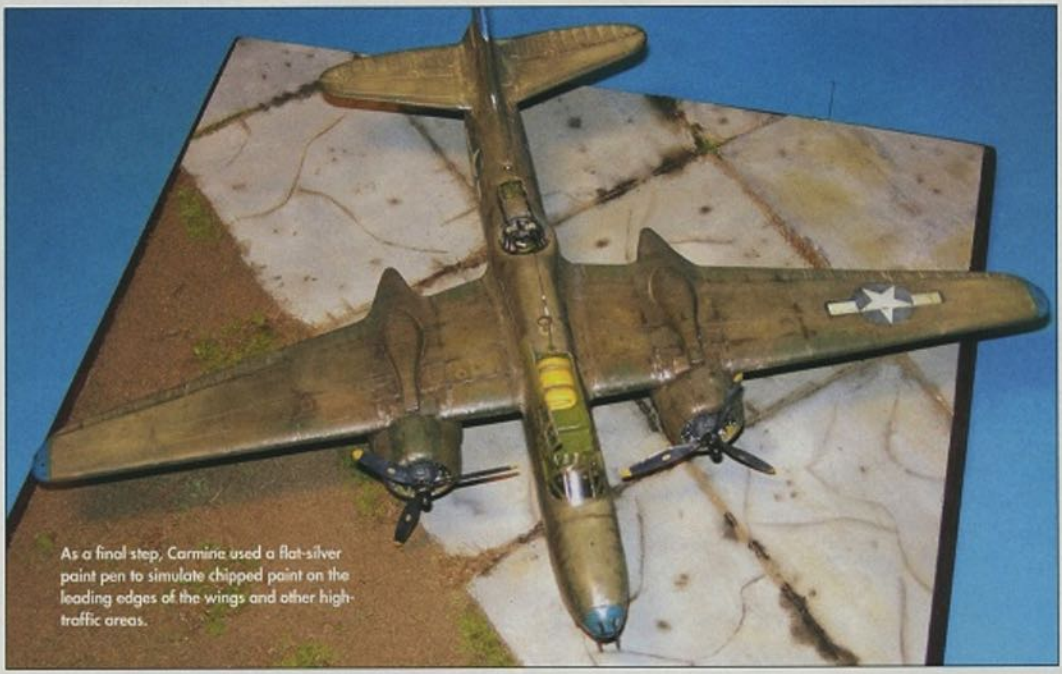
After cleaning up the kit's Pratt & Whitney radial engines, I broke out my detail wire and added ignition harnesses and pushrods, **12**. The engines are a real focal point of the model, and it's always worth putting in a little extra time to dress them up. I painted the engines with basic coats of gray and silver, then used a variety of dark washes to deepen their detail, **13**. After putting all that work into the engines I wanted them to be framed properly. Some careful sanding thinned the edges of the kit cowlings, **14**, and also improved their fit to the nacelles.

Fuselage and wings

Unfortunately, assembly didn't get easier as the kit parts got bigger – the fuselage and wings provided plenty of challenges. To

With his washes at the ready, Carmine works in one area at a time so the colors and the effects can build up slowly. He keeps plenty of reference photos handy has he works, too.

There's no denying the effectiveness of Carmine's weathering techniques. A-20s in combat weathered severely, and Carmine's model wears an accurately battered paint scheme.



As a final step, Carmine used a flat-silver paint pen to simulate chipped paint on the leading edges of the wings and other high-traffic areas.

simulate the support structure inside the wing's control surfaces, I grafted on thin styrene strips, **15**. When the glue was dry I sanded the strips until they almost disappeared and only a delicate ridge remained.

While I was sanding things, I filled all the gaps on the model, including the ones between the engine nacelles and the wing, **16**.

Painting and weathering

I painted the model with the standard scheme: olive drab upper surfaces with medium-green splotches on the edges of the wings. The underside is neutral gray. The decals mark the model as an A-20G, "Green Hornet," stationed in New Guinea in 1944, **17**.

Operating in combat and in a harsh environment was brutal on aircraft finishes. The familiar olive drab scheme faded to many different shades, and oil leaks, battle damage, and general wear and tear all took their toll quickly. I use a variety of artist's oil paints to vary the appearance of my weathered aircraft. Working one area at a time, I apply thin layers of oil paint one at a time. I use yellow, ochre, orange, red, and blue, **18**, among other colors. I work slowly, one area at a time, **19**, and I check my progress often. Paint almost never wears evenly, and checking my work against the reference photos my research turned up helped keep things looking accurate and realistic, 20. When I was satisfied with the painted finish, I added some "standard" weathering techniques, too: I added a little pastel weathering, and simulated chipped paint on the leading edges and other high-traffic areas with a flat-silver paint pen.

In the end, I spent approximately a month on my Havoc, and I couldn't be happier with the result. The model's appearance illustrates the harsh life weapons endure in combat, but somewhere underneath the delicacy and grace that's common among all aircraft is still somehow apparent. **FSM**

Reader Gallery

TRAVIS OFFENBERGER
DUBLIN, OHIO
Isracast's conversion and decals helped Travis modify Tamiya's 1/32 scale F-16CJ to a Block 40 aircraft. He installed Aires' cockpit and exhaust, and dressed up the jet with Eduard external photoetched-metal details and weapons from his spares box. Testors Model Master Acryl paints and ProModeller washes finished the model.

JONATHAN BRYON
WALLINGTON, SURREY, ENGLAND
"I have always been fascinated by this aircraft because of the unusual combination of a jet engine and a tail wheel," says Jonathon. He gussied up Classic Airframes' 1/48 scale Supermarine Attacker FB.2 by drilling out the gun barrels, making a pitot from brass tube and wire, and finishing with Xtracolor enamels.

▲ **DANIEL BUCHMEIER**
SANTA MONICA, CALIFORNIA
Daniel used alternative parts on Dragon's 1/35 scale StuG III Ausf E to model an Ausf F variant, scratchbuilding spare-track holders and a wheel rack from cardboard. He weathered with a whitewash of artist's oils, applied Blacken-It to the Friulmodel metal tracks, and used stencils to paint a German flag on lead foil before draping it over the back deck. The grass stuck on the chin is from Woodland Scenics.

◀ **BOB CARR**
CANTON, MICHIGAN
"This is the 120mm U.S. Marine figure sculpted by John Rosengrant, who, in my opinion, produces the best figures in the business," says Bob. The base depicts the black sands of Iwo Jima.

▲ **DAVID QU**
NEDERLAND, TEXAS
David used Trumpeter's 1/72 scale kit to model a Chinese Hongzha-5 bomber.

Reader Gallery

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Don't forget to provide essential descriptive information, including the manufacturer, model, scale, modifications, paint used, and reason for choosing the model, along with your name and address. We look forward to seeing your work!

◀ **BRUCE SMITH**
FAYETTEVILLE, ARKANSAS
Growing up in New York on Long Island, Greg often watched tugboats and eventually worked aboard one. He built Dumas' 1/72 scale *Carol Moran* according to what he had seen. Among the additions: two VHF antennas; scratchbuilt radar; handles for deck hatches; detailed portholes; a kedge anchor and chain at the bow; a towing hawser on the aft deck; docking lines on the cabin house; a winch for the lifeboat davit; tire fenders; and hinges on the cabin-house doors.

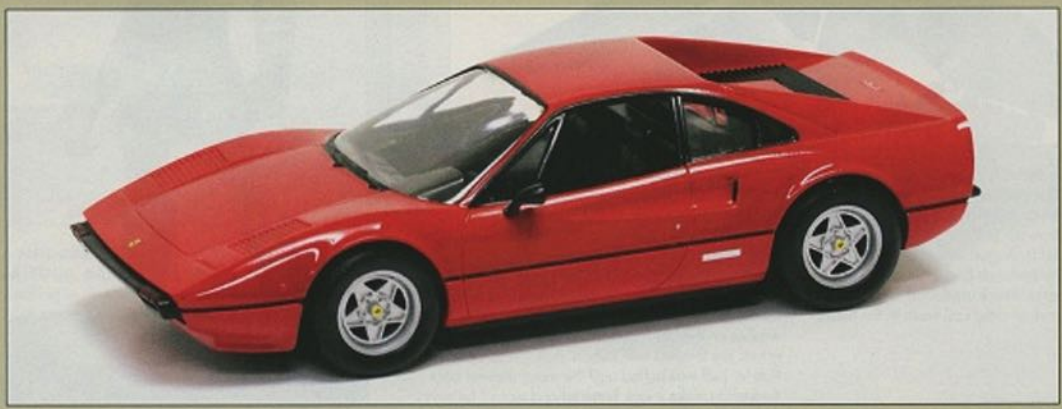
◀ **MIKE MIKOLASEK**
SURREY, BRITISH COLUMBIA, CANADA
Mike took Tamiya's 1/48 scale Bristol Beaufighter Mk.X higher with a cockpit from Cutting Edge, details from CMK, a canopy from Squadron, and a photoetched-metal detail set from Eduard.

▼ **MIKE GRANT**
CALGARY, ALBERTA, CANADA
Mike built Trumpeter's 1/144 scale Beriev A-50 "Mainstay," a Russian airborne early warning aircraft based on the Ilyushin Il-76. "Even in this scale, the model is about the same size as a 1/72 scale Avro Lancaster," Mike says. "One of the biggest challenges of the build was getting all 20 wheels on the ground!"

▲ **DAVID TOWNSEND**
QUEENSBURY, NEW YORK
A field modification David saw in a book published by Panzerwrecks inspired him to modify the front armor on Tamiya's 1/35 scale Möbelwagen. He weathered the self-propelled AA gun with Mig pigments and filters.

◀ **MIKE WALSTON**
BRADENTON, FLORIDA
Obi-Wan's Jedi Starfighter, Revell's 1/24 scale SnapTite kit, got a scratchbuilt hyperdrive ring from Mike, who repainted the Revell portion according to the spacecraft's appearance in "Star Wars III: Revenge of the Sith." He put magnets on the wings and metal strips on the mount to hold the ship to the ring.

▼ **CHARLES THOMPSON**
ROBBINSVILLE, NEW JERSEY
The 1980s TV show "Magnum P.I." inspired Charles to model this Ferrari 308 GTB. He sprayed Revell Germany's 1/24 scale car with three misty coats and three heavy coats of Tamiya Italian red, and sprayed the interior with Tamiya semigloss black. The wheels are painted the old-time way: by hand, by brush, with Testors silver enamel from a bottle.



Reader Gallery

FREDERICK DELISI
STATEN ISLAND, NEW YORK
Frederick says he added a few scratchbuilt extras and Eduard photoetched metal to further detail Trumpeter's 1/32 scale "visible" Me 262A-1A.

▲ BRUCE WILLIAMS
OSHKOSH, WISCONSIN
Bruce painted Tamiya's 1/48 scale Brewster Buffalo as it was flown by 1st Lt. August Diebel of the Royal Netherlands East Indies army air force. Bruce used Tamiya acrylics and an artist's oil wash in the finish.

▶ CRAIG PIERCE
PEORIA, ARIZONA
"This was my second attempt at a metal figure," Craig says of his 54mm "Gladiator Scissor" by Pegaso. He used several shades of brown acrylics to replicate boiled leather on the torso armor. After applying a dark artist's-oil wash to the chain mail, he polished it to restore the metallic sheen. Craig tinted acrylics with watercolor washes on the fabrics and flesh; the helmet and leg armor are finished with Rub 'n' Buff. "In some areas, the Rub 'n' Buff was buffed until the metal showed back through to make it look battered and worn," he says.

DAVID WAPLES
WESTMINSTER, COLORADO
"Everything about this model was changed, from bow to stern," says David, who strove for accuracy in depicting Revell's 1/72 scale PT boat as John F. Kennedy's *PT 109* at the time of its sinking in the Solomons in August 1943. Among the numerous details were resin-cast torpedo tubes, a 37mm gun and other items from White Ensign, a John R. Haynes 20mm gun on the stern, Aires .50-caliber machine guns, and soldered-brass depression rails around the guns.

▲ **NEIL GREMELL**
BALFOUR, BRITISH COLUMBIA, CANADA
Installing Verlinden's Calliope rocket launcher on a Tamiya 1/48 scale Sherman M4A1 "provided some challenges," Neil says, "but (the Verlinden set) did include a fret of photoetched metal for things like the light guards." Like its Soviet counterpart, the *Katyusha*, the Calliope was never very accurate but always very scary.

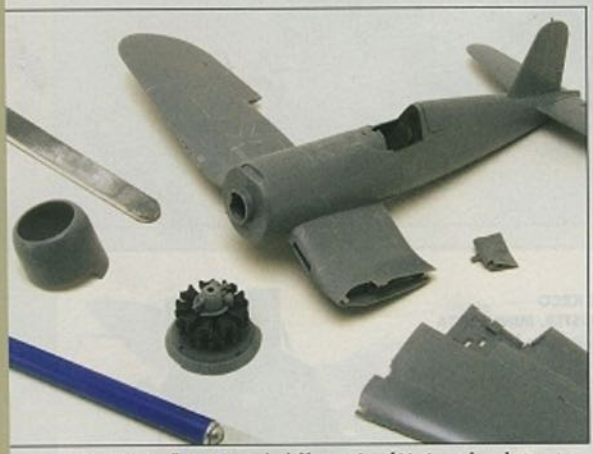
CHRIS KRCO
ROCHESTER, MINNESOTA
Chris installed a 1/35 scale Resicast dump-truck conversion on Tamiya's GMC 353 6 x 6 cargo truck, added photoetched metal from Eduard, and painted the truck with Polly Scale olive drab acrylic, then weathered with soft pastels.

| PART FOUR |

SCALE-MODELING ESSENTIALS

Final construction, painting, and decals

BY MATTHEW USHER

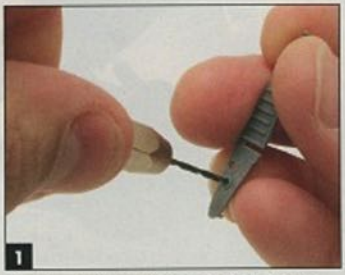


Hey! It's actually starting to look like an aircraft! Let's get these last parts together and park this World War II classic on the shelf!

Welcome to the final installment of my back-to-basics Corsair project. If you're just joining us, a few issues back I decided to knuckle down and build Tamiya's 1/48 scale Vought F4U-1D Corsair (kit No. 61085) straight from the box, without adding any aftermarket parts. I wanted to make the most of the kit itself, using basic tools and techniques. It'd be a good way to break out of a modeling slump while taking one more kit out of my "to-build" pile.

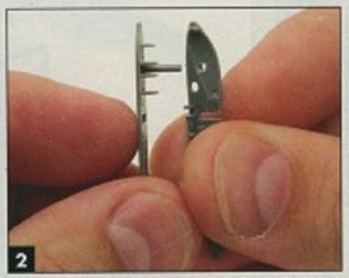
I don't know if this is true for many modelers, but it's pretty rare for me to consider a project totally "finished," and that's certainly true with this one. While everything's assembled, painted, and decaled, I'll probably continue to tinker with it off and on for the next few weeks. I'll likely add some weathering and install the most-delicate last-minute details, like the pitot and the antenna wires.

But getting to this point – when the kit box is empty and the model's sitting in front of me – is one of my favorite parts of modeling. On top of that, it's also the time I'm most fired up to pull out another kit and start a new project. I hope you enjoyed this series, and hopefully it helped inspire you to jump in and build your own straight-from-the-box project too!



1

The wings in Tamiya's kit can be folded, but I wanted to build a "ready to go" aircraft. There are holes in the wing folds that need to be drilled out to strengthen the down-and-locked wings. I used a fine drill bit in a pin vise to open them up.



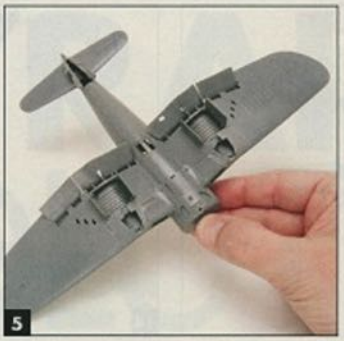
2

After opening up the alignment holes in the wing folds I did a little filing and plenty of test-fitting before attaching the parts to the model. I used gap-filling super glue to assemble these parts.

3

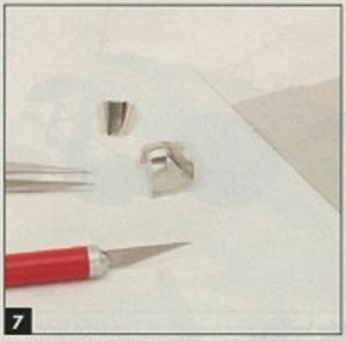
I installed the right wing's outer panels first. Sighting down the leading edge is a good way to make sure the wing's properly aligned at the folding point.

I took a little extra time to make sure the wing panels were properly aligned after gluing them in place – I didn't want to put another bend in the Corsair's wing accidentally!

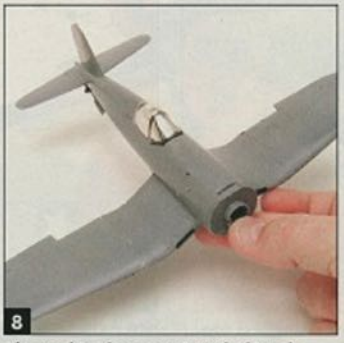


While the top of the Corsair is relatively smooth, there's a lot going on underneath. I used slow-curing glue to install the control surfaces and the landing-gear doors, and I checked their alignment often.

To hold the model securely while I spray-painted it, I wrapped a hardwood dowel with masking tape until it fit snugly into the front of the fuselage. You don't want a freshly painted model falling onto the floor!



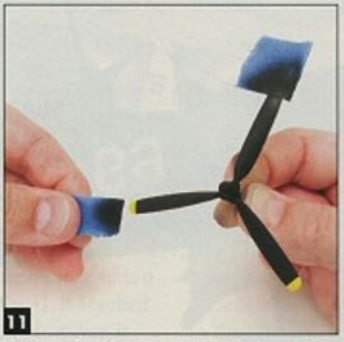
Unlike its "birdcage" cousin the F4U-1D doesn't have an overabundance of canopy framing. I masked the clear parts using Bare-Metal Foil and trimmed away the excess using a brand-new hobby-knife blade.



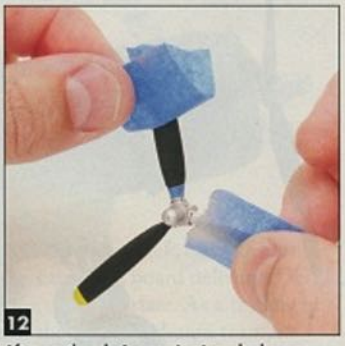
After masking the canopy I attached it to the model using Microscale Micro Krystal Klear. A hair dryer set on low heat helped speed up the drying process.

After securing the model on its "paint stand" dowel, I gave it an overall coat of Tamiya Navy blue (AS-8). Although Tamiya's spray paint dries quickly, I set it aside for a couple of days to make sure everything cured completely.

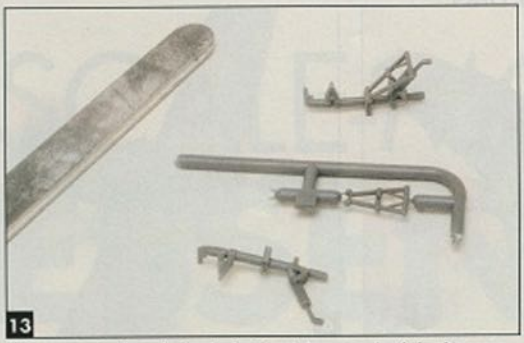
I painted the three-blade propeller in three steps, starting with the yellow tips. I loaded a little Tamiya flat yellow (XF-3) in my airbrush and added light coats until the color built up and was opaque.



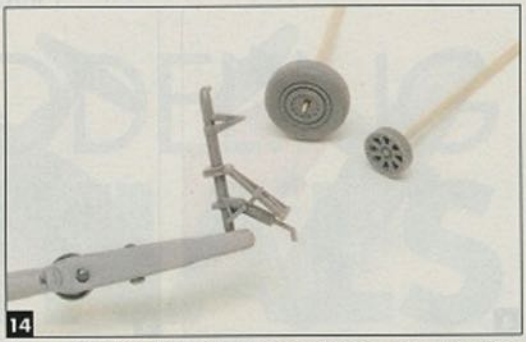
I let the yellow tips dry overnight then masked them with blue 3M painter's tape. I loaded Tamiya flat black (XF-1) into my airbrush and painted the blades and hub.



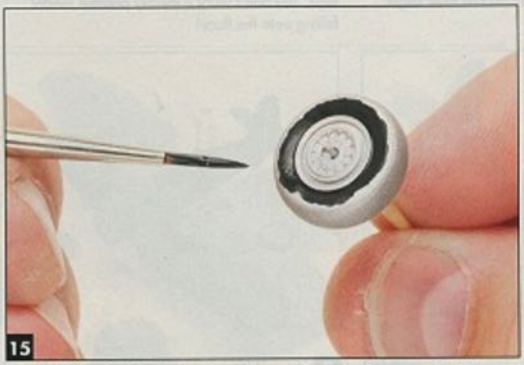
After another drying session I masked everything but the hub and airbrushed it Tamiya flat aluminum (XF-16). Painting a prop can be tricky, but working in this order makes masking easier.



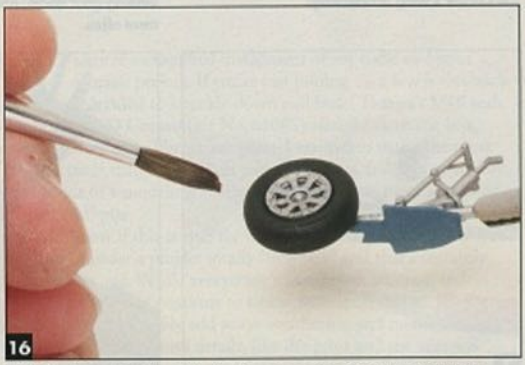
Like most carrier-based aircraft, the Corsair has extra-beefy landing gear legs. I used a fine-grit sanding stick to clean up the parts then assembled them using gap-filling super glue.



There are lots of tricks for holding parts securely during painting. An alligator clip on a dowel holds the landing-gear leg, and the wheels and tires are pressed onto toothpicks.



I painted the wheels silver and set them aside to dry for a couple of days. Next I hand-painted the tires flat black, starting at the edge of the wheel and working my way out.



With the tires painted and the landing gear assembled, I added a light wash of artist's oil paint to add some depth to the Corsair's massive wheels.

Matthew's model wears the markings of a Corsair from USS *Franklin* in February, 1945. FSM

SKYRAIDER EVOLUTION

Mix and match kit parts to build three unique Skyraider variants

BY DARREN ROBERTS

Douglas' Skyraider was easily one of the most versatile combat aircraft ever designed. Darren Roberts shows how to build three distinct variants.

The Douglas AD Skyraider is one of those historic aircraft that will endure forever in aviation lore. Designed during World War II, it reached production too late to see action. However, it would go on to serve for more than 20 years, participating in the Korean War and finishing its service during the Vietnam War. The basic airframe was used in many different roles, including attack, early airborne warning, sub hunting, carrier on board delivery (COD), air ambulance, and electronic warfare. As a testament to the effectiveness of the Douglas design team, its replacement, the A-6 Intruder, couldn't compare to the Skyraider's combination of impressive loiter time, firepower, and diverse mission capabilities.

A cast-resin conversion set from C&H allowed Darren to build the electronic warfare version of the Skyraider, the AD-5Q.

The plan

Originally, I wanted to build the Navy's electronic warfare version, the AD-5Q, for an airwing project I was in the middle of. I purchased the C&H A-1E resin conversion, which provided most of what I needed. However, it was lacking some important details, but thankfully I found these in Matchbox's AD-5 kit. Taking the parts from that kit would leave me with a kit I wouldn't build. Looking in my stash, I saw that I had an AMT/Ertl AD-4W kit. I quickly realized that I could make three different versions of the Skyraider that would make unique additions to my shelf. I also wouldn't be wasting any kits.

The AD-5Q

I began the project with the AD-5Q, which was later redesignated EA-1F. I started with the C&H resin kit that converts the Tamiya A-1H Skyraider into an Air Force A-1E. The C&H kit comes with resin fuselage halves, the Cobra Company A-1E resin interior, and a few other resin bits. However, I had to convert the conversion to get an accurate AD-5Q. Since the Cobra Company cockpit can be installed after the fuselage is assembled, the first step was to glue the resin fuselage halves together. I sanded the mating areas to get a nice, flat surface, then used super glue to bond them. Next, I glued the resin wheel bay inserts into the Tamiya wings following the instructions in the C&H kit, **1**. The resin inserts turn the wheel bays from square openings to the correct round openings.

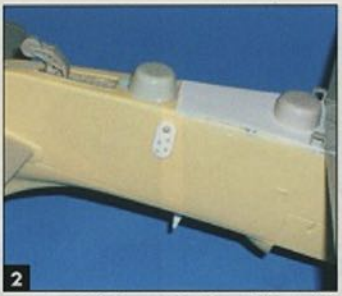
The AD-5Q didn't have wheel-bay doors like later versions of the Skyraider. The gear simply retracted backward and the wheels were left uncovered.

With the wheel bays taken care of, I moved on to the smaller details that distinguished the Navy's AD-5Q from the Air Force's A-1E. The first detail was making two sets of AN/ALR-3 antenna arrays, one for each side of the fuselage. I cut an oval from thin sheet plastic, then used that piece to make another identical one. For the small bumps, I cut rounded locating tabs from some spare wing pylons and glued them in place on the oval-shaped base. The completed antenna arrays were then glued into the proper place on either side of the fuselage. I also needed to add the AN/APA-69, which came from the Matchbox kit, and the AN/APQ-33 dome, which I made from two-part epoxy clay to the underside of the fuselage, **2**.

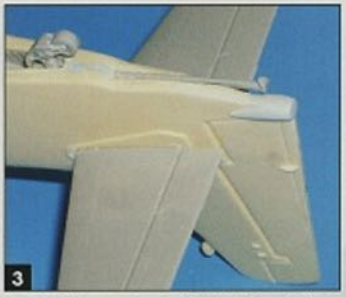
The AN/APA-69 antenna from the Matchbox kit is positioned just in front of the tail wheel, while the scratchbuilt AN/APQ-33 antenna is located just behind the trailing edge of the wing.

Moving to the tail area, the AD-5Q was unique in that it had an AN/ALQ-2 ESM antenna located under the rudder. I again used two-part epoxy clay to fashion the antenna, **3**.

Fixing a hole: The AD-5Q had round main-gear wells, so Darren installed cast-resin conversion parts. The AD-5Q didn't have full wheel-bay doors like later Skyraiders.



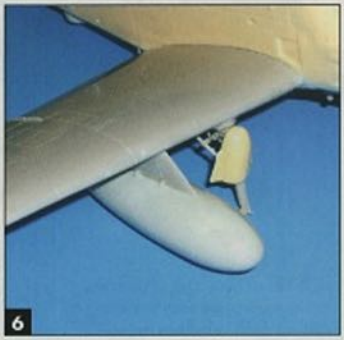
Darren used a little scratchbuilding skill to model the AD-5Q's AN/ALR-3 antenna arrays. There's one on each side of the fuselage.



The AD-5Q was unique in that it had an AN/ALQ-2 ESM antenna located under the rudder. Darren fashioned one using two-part epoxy clay.

The underside of each wing needed a long blade antenna. Darren cut a pair from sheet plastic and sanded them to shape.

The beacon light mounted on the leading edge of the tail is provided in the C&H conversion kit.



The aircraft's prominent APS-31B search radar pod under the wing came from the Matchbox kit.

The AD-5Q has a massive cockpit (covered by a huge canopy) so it's possible to install the interior details after assembling the fuselage.

Darren used two-part epoxy and auto-body filler to cover the clear parts to replicate the metal inserts installed on the aircraft.

No, it doesn't have a gland problem. The Navy's airborne early warning Skyraider (with its bulbous radar dome) was the AD-5W.

The ESM antenna unique to the AD-5Q was made from two-part epoxy.

The underside of each wing needed a long blade antenna, each of which was cut from sheet plastic and sanded to shape, **4**. Using my photo references as a guide, I sanded the plastic stock to shape to produce the matching antennas.

On top of the fuselage, this Skyraider has a tall blade antenna and an ANR-6 radio compass loop antenna located just in front of the tail. The blade antenna was made the same way that the ones for the underside of the wings were made, and the ANR-6 antenna came from the Tamiya kit. There was also a beacon light mounted on the leading edge of the tail, which is provided in the C&H kit, **5**.

The prominent APS-31B search radar pod under the wing came from the Matchbox kit, **6**.

With all the conversion parts in place, the AD-5Q was ready to have the cockpit installed, **7**.

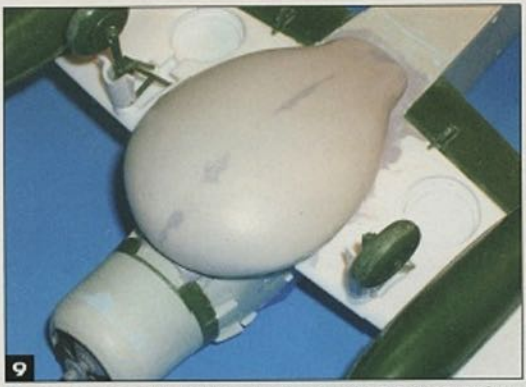
The conversion of the conversion is complete and ready for the cockpit.

I finished building the rest of the kit, and then attached the clear parts, which I usually don't do until after I paint. In this case, the rear portion of the canopy needed to be reshaped. Inserts were installed to cover the canopy glass; the amount of light coming in was greatly reduced for the crew working in the back. The only view the crew had was from small, arch-shaped windows on either side of the insert. I used two-part epoxy putty to get the general shape, and then I used auto body filler to refine it and fill any imperfections, **8**.

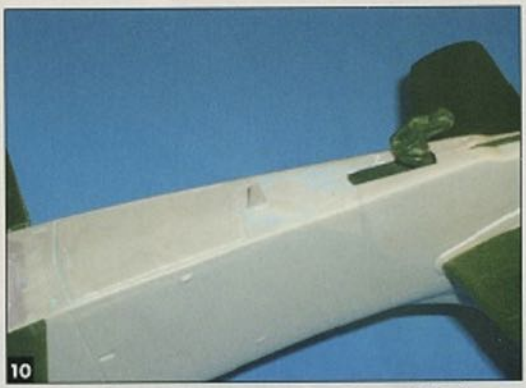
Two-part epoxy and auto body filler cover the clear glass from the kit and replicate the metal inserts used to block light.

I made sure to cover up the clear pieces in front so they wouldn't be damaged.

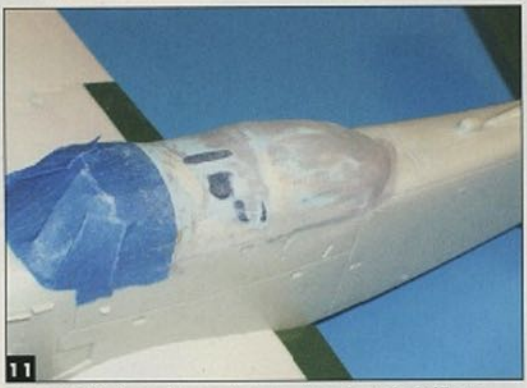
With all the conversion components in place, it was time paint. I primed the entire model using Mr. Surfacer 1200, after which came the camouflage colors of light gull gray and white. Markings for this particular VAW-33 aircraft came from my spare decal boxes. A final layer of weathering was added using an artist's-oil wash of lamp black and burnt umber. The exhaust staining was accomplished with a combina-



Darren robbed the AN/APS-20E radar dome from AMT/Ertl's AD-4W kit. A little gap-filling super glue filled the unsightly gap between the fuselage and radar dome.



You guessed it – another blade antenna! Unlike all the ones he had to scratchbuild, Darren was able to lift this one from Tamiya's Skyraider kit.



Once again Darrin used two-part epoxy putty and auto-body filler to "blank out" the rear cockpit windows.

All the different colors of plastic give a good indication of how many different sources donated parts to the project.

tion of airbrushing dark gray and then adding brown pastels and oil paints. A final flat coat, and the first of three Skyraiders was done.

The AD-5W

With the AD-5Q parts from the Matchbox kit, I could have completed what was left as an Air Force A-1E, but I'm a Navy kind of guy, so that just wouldn't do. I could, however, make the Navy's airborne early warning variant, known as the AD-5W. To do this, I robbed the AN/APS-20E radar dome from AMT/Ertl's AD-4W kit. The fit was not too bad actually, even though it was designed for the AMT/Ertl kit. A little gap-filling super glue filled the unsightly gap between the fuselage and radar dome.

After the radar dome was attached to the bottom of the fuselage, I continued to build the Matchbox kit, following the instructions, **9**.

The radar dome from the Esci kit was grafted onto the Matchbox kit. Note the lovely multicolor plastic that's a Matchbox tradition.

The only addition to the kit besides the radar dome was a small blade antenna on the underside of the fuselage, which I took from the Tamiya kit, **10**.

The small blade antenna from the Tamiya kit is in its proper place on the underside of the fuselage.

I built up the rest of the kit and then added the clear parts on top. Like the AD-5Q, the AD-5W also had the metal inserts added to the rear transparencies. I did the same thing to these clear parts as I did to the other model, **11**.

Two-part epoxy and auto-body filler do their job again.

With construction complete, it was time to cover up the multicolor Matchbox kit, **12** with an accurate paint scheme.

I used Testors Model Master Acryl light gull gray for the upper surfaces and Testors Boyd's white primer for the white undersides and moving flying surfaces. The markings for VAW-12 came from the decal spares box.

The AD-4NA

At first I thought about making a standard

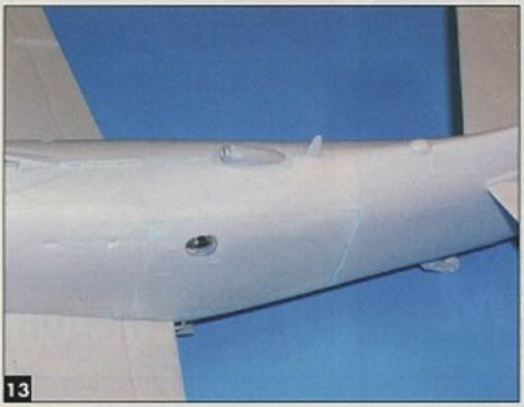
Darren was inspired to build his AD-4NA after browsing through Bert Kinzey's *AD Skyraider in Detail & Scale*.

A-1H from the AMT/Ertl kit, but the correct parts to make an A-1H weren't in the kit. I found what I was looking for while browsing through the Detail & Scale book on the Skyraider. I came across the AD-4NA, which was an AD-4 airframe converted to night attack. The night attack gear was taken out so that it could carry more ordnance. Most of what I needed to make the AD-4NA was included in the Esci kit. I built up the Esci kit per the kit instructions and then set out on making the small detail corrections. The AD-4NA had a small cooling scoop located on top of the fuselage spine. I fashioned one from two-part epoxy putty and added a small, round opening from a vent I found in a derelict 1/72 scale A-6 Intruder kit. I also had to cut away the blade antenna from the spine and move it back behind the cooling scoop, **13**.

The next correction was putting in the armament. The Esci kit didn't come with the wing cannons. I was going to use the cannons from the Tamiya kit, but the AD-4NA was a night-attack aircraft, and the gun barrels had flash suppressors on them. I took a look at the Matchbox barrels, and they actually had the correct shape. So, I drilled holes in the wings and installed the Matchbox gun barrels, **14**.

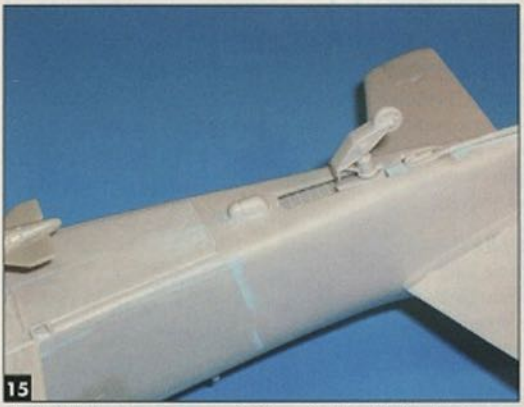
The last few details that needed attention were on the underside of the model. I moved the ANR-6 radio compass loop antenna, which comes in the kit, to the underside of the fuselage, just in front of the tail wheel, **15**.

The last thing I needed was gear doors. The AD-4 series, like the later AD-6, used full doors to cover the retracted landing gear. The basic Esci kit usually comes with gear doors. However, the AD-4 boxing came with the round, open wheel bays. But I was in luck. I hadn't used the gear doors from the Tamiya kit. So, I tried fitting those on the AMT/Ertl wings, and they were virtually a perfect fit. Only a bit of shaving some of the sidewall was needed to slip

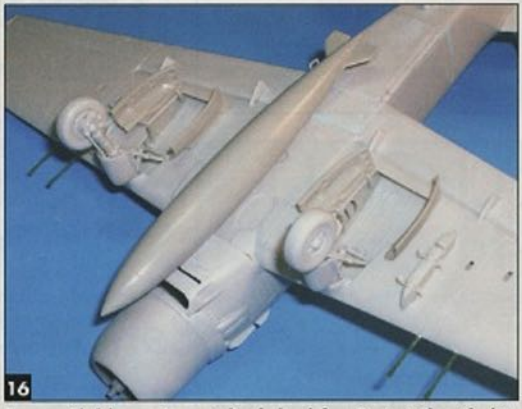


Darren made the cooling scoop on top of the fuselage from two-part epoxy and a piece from a discarded A-6 Intruder.

The gun barrels from the Matchbox kit had the correct flash suppressors on them for the night-attack aircraft.



The kit ANR-6 antenna was moved to the underside of the fuselage to a spot just in front of the tail wheel.



Darren raided the massive centerline fuel tank from Tamiya's Skyraider kit. His spares box provided the VA-216 markings.

them into the AMT/Ertl wings.

The Tamiya gear doors fit quite nicely on the Esci kit. The centerline fuel tank from the Tamiya kit was also pressed into service.

I also snagged the centerline fuel tank from the Tamiya kit, **16**. Now my third Skyraider version was ready to paint. The same process was repeated for this version that had been used on the previous two. My spare decals box got a little lighter, too, after I used it to source the model's VA-216 markings.

Triple play!

Whew! Thanks to some creative planning, I was able to mix and match parts to build three unique Skyraider variants. In the end, I was quite happy that I didn't have any derelict and/or uselessly parted-out kits left over. The best thing was that this project forced me to expand my model building skills just a little bit more than I've done in the past, especially with regard to scratch-building and kitbashing. I'm sure this exercise – all three parts of it – has allowed me to improve my overall hobby skills that much more so I'll be that much more prepared for the next project that might test the limits of my more advanced modeling skills. **FSM**

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Questions & Answers

A clinic for your modeling problems

By Mark Hembree

Opening business

Q How do you cut apart vacuum-formed canopies to open cockpits? Mine twist when I attempt to separate them. Also, I need advice on how to open windows and panels on canopies, like on a B-17.
– John Lambert
Fernley, Nev.

A The first thing you need is a new, sharp hobby knife. That razor has to be tip-top keen for a clean cut.

For the vacuum-formed canopy, form a lump of clay or Silly Putty to support the canopy and keep it from bending, sagging, or twisting. Don't try to cut through all at once — make a scribing cut first, then follow the same path until you cut through. Be patient.

The same goes for cutting open heavier plastic for canopies, windows, hatches, etc., but there's a little work ahead of wielding a knife. If you are cutting through solid plastic (like a fuselage), you can save some time by *carefully* thinning the inner side with a motor tool. Also, you can make it easier by drilling several small holes within (but not quite to the edge of) the area to be opened. Enlarge those holes, ultimately "connecting the dots" to produce an opening you can then more easily shave and trim to shape.

Future before decals

Q I want to apply Pledge Future floor polish to create a gloss base for decals; I understand it's a really good method. The KC-97 I'm building is large and has many small decals all over the aircraft. Do I spray the Future on, brush it on, or dunk the whole thing? Or, do I just apply it where the decals are to be placed?
– Jim Bunch
Palmdale, Calif.

A Don't dunk it, Jim! Sometimes you can just brush Future on isolated spots. But for a whole plane, airbrushing is the ticket. Use Windex or an ammonia cleaner as a solvent to clean up your airbrush. Be sure to follow that with an airbrush cleaner (I use lacquer thinner); ammonia can etch brass parts in your airbrush.

The trick with Future is to spray it on fairly thick, trusting its leveling properties. Too much and it will develop drips and runs; too little and it will be pebbly. If it does run — or you accidentally brush against it, drop it, whatever — don't try to repair it at that moment. Leave it alone and let it dry. Often, mistakes will level themselves out as the Future dries. Leave it alone for 48 hours to make sure it's solid before proceeding. If you still have a run, gently sand it down and recoat with Future.

Rough-cast textures

Q I've read that using a mixture of putty and glue for texture can make a tank turret look more realistic. I've mixed putty and glue for corrosion effects, but what brush technique would you use on the turret?
– James Moulton, Manchester, N.H.

A I've seen modelers use a mix of putty and liquid styrene cement. Others use the cement by itself to soften the plastic. Still others use Mr. Surfacer, either spraying or brushing it on a turret or other cast part. Whatever the material, after applying it to the surface you stipple it (poke the surface) with an old, coarse brush, creating a pitted texture that resembles a rough steel casting.

In the November 2009 *FSM*, Willie Lanier stippled a putty/cement mix to texture the surface. Also note how he modeled welded joints by sculpting putty.

After it dries, you can moderate the effect with some light sanding to take out peaks. This technique adds dimension to an otherwise smooth surface. Study pictures of the vehicle to decide what looks right.

Tuning in antennas

Q Is there a preferred method of attaching wire or string for antennas on an aircraft? I'm having trouble making this work.
– Fred Lopez
Goleta, Calif.

A There are several ways of rigging antennas. Some things work better than others in certain scales. Here are a few different ways.

- Stretched sprue is the old standby. Cut a smooth rod from a parts tree, heat it over a candle, and, just when it starts to melt, pull the ends apart, making a fine thread of plastic. Snip off the ends, put a tiny drop of super glue at one destination, a little accelerator on the end of the thread, and use it to touch the super glue for an instant attachment. Cut the thread close to length, then do the same at the other end. (The trick here is to execute the attachment in as few tries as possible to avoid glue buildup.) Once both ends are attached, light a match, blow it out, and pass the glowing ember near the thread of stretched sprue. Boing! The sprue will go taut. Careful, though — if you get too close or hold it there too long, the thread will get too tight and snap. Then you'll have to start over. (If you are a subscriber, you can see *FSM* associate editor Aaron Skinner's video demonstration of stretching sprue at www.FineScale.com; you'll find it under "how-to videos.")
- Another material people use is monofilament fishing line. Choose the gauge to suit your scale. It also tightens with a little heat.
- Or, you can use nylon thread. It will tighten up with heat, too.

Decal suggestions

Q I have purchased decal paper from Micro Mark many times, since it is not available at stores here in Greece. Problem is, when I apply decal solution from Model Master, Microscale, or Mr. Mark Setter, the edges of the decal turn up. I use a gloss or matte clear to seal the decal, the same stuff I use to cover the aircraft when the build is done.
– Nick Evlog
Glyfada, Athens, Greece

A Thanks for writing, Nick. There are a lot of variables at work here, so it's hard to evaluate from where we sit. From what you said, the prime suspect would be the decals. Some just don't take to setting

solutions. Test beforehand to see how they react to the solution.

You could be letting the decal sit in the water too long before application. Dip the decal and lay it on a paper towel until it loosens.

Next suspect would be the surface. Try putting a gloss coat down where the decal would go — decals will adhere to gloss much better than a flat (matte) surface. In fact, a flat surface could be the culprit.

Try skipping the decal-setting solution. If you have access to Pledge Future floor polish, put a little pool of it in the spot and put the decal on that. (By the way, this can be a cure for silvering, too.)

Another thing you can try is to wet the area with distilled water. And you can do the same with saliva (really) — spit saved the day for an airliner I had with very thin decals!

Once the decal is on, blot away excess with a cotton swab and gently roll out any bubbles —in effect, tamping the decal down.

When it's all done and dry, overcoat as you have before.

Orange peel begone!

Q I recently bought an airbrush compressor, and I am wondering what is the best pressure to use for glossy paint (as on car bodies). I have three Tamiya HG airbrushes. I always used Tamiya's 7.2-volt, battery-powered compressor but never got a good result. I just get a rough, orange-peel finish.
– Jan-Roger Simensen
Halden, Norway

A Pebbly, orange-peel finishes happen when the paint begins to dry before it hits the surface. It could be from working too far away, using too much thinner, or not enough air pressure.

There is no "set" psi — it's a combination of your thinning ratio, how close to the model you are, even the type of paint. Glossy finishes look very wet as applied, almost to the point of running. Getting it on without runs takes practice.

Allow me to suggest "Airbrushing bright finishes" in the Nov. 2009 *FSM* for a sampling of the different approaches modelers use to achieve high-gloss finishes. Back issues are available at www.FineScale.com or by calling Kalmbach customer service at 262-796-8776 (800-533-6644 here in the States).

Sludge wash

Q I found an old article on how to enhance panel lines with a sludge wash and it mentioned starting with a gloss finish. Do you have any suggestions on how to use a sludge wash over a metallic finish like Alclad II, where either a gloss or flat coat would destroy the realistic finish?
– Jim James
Orlando, Fla.

A Everyone has their own ways of working a finish. There's no hard rule here. Since you are using Alclad, an enamel that is tough after drying, the sludge wash should not affect the paint. No need for an overcoat; go ahead and start sludging!

BOING! THE SPRUE WILL GO TAUT.

Testing 1, 2, 3 ...

Q Do you have a recommended "lightweight" way to check flaws in filling and sanding? I would rather not prime the entire model, especially since primer is fairly heavy. Is there something that I could paint on that would reveal problems but can be left in place (or easily cleaned off)?
– Dave Thewlis
McKinleyville, Calif.

A You've probably heard that painting a natural-metal finish requires thorough preparation because metallic paint shows flaws so easily. Well, there you go — rather than prime the whole model, brush a little metallic paint on suspect areas. It works great for showing flaws in seams. And, on the leading edges of wings, for example, it can even help model chipped paint. When you're satisfied with the surface, use the same kind of paint (enamel or acrylic) and go right over it.

Copper patina

Q I need a technique to make copper paint look more rustic. I read somewhere that you can get that effect if you spray copper on the model and submerge it in saltwater. Is that true?
– Stan Erickson
Menasha, Wis.

A Stan, you could try what you're describing and get that effect eventually. Here are some other things you could try that would produce more immediate results:

- One fellow sent us pictures of figures painted to look as if they had a patina of aged bronze; he said he got that look "by coating them with Krylon flat black, then dry-brushing with Triangle Crafts 'blonde bronze metallic surfacer.' Teal pastels brushed into the recesses depicted oxidation."
- Rust-oleum (available just about anywhere paint is sold) makes a kit for copper patina. You can see it at www.rustoleum.com
- Other such kits for similar treatments can be found at crafts stores such as Michael's and Ben Franklin.

More metallic

Q Will Micro Sol and Micro Set damage Alclad II chrome? It says on the Alclad bottle that decal-setting solutions are not recommended.
– Paul Gilles
Menlo Park, Calif.

A Fully cured Alclad is pretty tough; Micro Sol and Micro Set should not harm it. You do want to mop up excess solution. Use a damp cotton swab to wipe away spots or stains after the decals dry.

Hard and soft edges

Q In regards to paint schemes, could you please explain the difference between "hard" and "soft" camouflage?
– Marshall Williams
Aurora, Colo.

A When people call a scheme "hard" or "soft," they are referring to the edges of the colors. A good example of both is found on World War II German fighter aircraft, such as the Bf 109 in Europe. If you look at the color borders of the underside and upper surfaces, and at the camouflage patterns on the sides, you'll see the edges are soft-edged. On the other hand, if you look at the colors on the wingtops and top of the fuselage, you see a splinter scheme in which the edges are straight and hard, as if they could be drawn with a ruler. However, hard edges don't have to be straight — the Spitfire's camouflage had hard edges.

In airbrushing, you can get hard edges when you burnish the masking tape tight to the surface. For soft edges, you can leave the masks slightly raised and spray from straight on. A little paint flies past the raised mask, resulting in soft edges with one color gradually turning to the one next to it. **FSM**

Reader Tips

Solutions and innovations

By Aaron Skinner

Ward ground a razor saw blade into a tapered, rounded shape (center) that is perfect for applying and shaping putty as well as scraping panel lines.

Handy putty applicator and seam scraper

Applying fillers and putties to small areas can be, well, less than enjoyable. I made myself a special tool to make the job easier and more precise. I started with a Tamiya keyhole saw blade that was past its prime. Being careful and wearing all appropriate safety gear, I used a Black & Decker RTX Moto-Tool and a sturdy cutoff wheel to grind the saw's teeth off. I ground that side flat and straight. I ground a gentle, sweeping curve shape into the other side. Deburr all edges with sandpaper or a honing stone, but don't sharpen anything. Insert your new putty applicator into any standard hobby-knife handle.

Big bonus — the same tool can also safely remove raised panel lines or details! Hold the handle at about a 45-degree angle, with the blade turned sideways in relation to the raised details. Using light to medium pressure, simply pull the tool towards you. The top of the raised detailing will be gently scraped off. Stop there if you only want to simulate worn areas, or repeat a few times to remove more.

The spring steel used in these small saw blades bends in a very helpful way. It almost feels like you're using a firm paintbrush when applying putty. The springy metal won't let you use too much pressure while scraping details off, making it much harder to accidentally gouge or mar the surface. I won't be in any hurry to go back to lesser tools!

– Ward Shrake
Raton, N.M.

Sterile model cleanup

Recently trying to clean up a bit of "excess" weathering on a model, I decided to use an alcohol swab from Curad. Not only did it clean up my excessive weathering, using the swab aggressively actually removed spots of unwanted paint and even stripped newer, water-based acrylic paints.

– Tom Taylor
Zachary, La.

Spot accelerator applicator

Most modelers are familiar with the Touch-n-Flow applicator for applying solvent adhesives. I've found it also works great for precise application of super-glue accelerator. I apply the proper amount of slow-setting super glue and position the part. Then I allow a small drop of accelerator to flow from the Touch-n-Flow applicator, rapidly setting the glue and locking the part in position. This keeps accelerator from going where it isn't wanted. You have to be careful to not let the tip touch the glue, though, or it will block the tip.

– Jackie Preston
Grapevine, Texas

Buffing acrylic paint or Future

Car modelers like me, who have children in the house and have switched to acrylic paint for safety's sake, have difficulty getting acrylics to polish to a shine. I've had the same problem with Pledge Future floor polish. After some trial and error, I've developed a method that works pretty well. I start with a polishing kit, but only sand up to 8,000 grit. Then, I use Turtle Wax Polishing Compound to smooth out the surface a little more. Finally, I apply Turtle Wax Color Back: There is something in the Color Back that reacts with the acrylic paint and shines it up almost to the sheen of a finely polished lacquer.

– Michael Dooley
Portland, Ore.

Save flash from older models

Save the flash — thin, excess plastic frequently found in older kits — because it makes a great filler. During assembly, some kits have gaps or seams that need to be filled: sheet plastic is too thick, and filler is inconvenient because you risk destroying surrounding detail while sanding.

Instead, I use flash to fill gaps between trailing edges of wing halves, between fuselages and stabilizers, and in wing-to-fuse-

lage gaps. Lightly work or press the flash into place, apply liquid cement, let it cure, then slice off the excess. The flash will even melt slightly, since it's so thin, and fill the gap well. The excess can be used on another kit. Flash comes in various thicknesses and colors, so you might have to experiment. I keep a small supply on my workbench all the time for quick use.

– Mike Allen
Pensacola, Fla.

Nail-buffer as modeling tool

I've used a Dremel Moto-Tool for decades, and find it essential for many tasks. Unfortunately, even with the speed stepped down through a rheostat, the tool spins so fast it can melt plastic.

Thanks to my wife, Lynn, I've found a cost-effective alternative: a rotary nail buffer. Available as battery-powered or rechargeable, nail buffers are slow-speed rotary tools designed for filing, polishing, and smoothing. Lynn's has long used a small, battery-powered nail-polishing tool, and recently also got an impressive rechargeable unit with a variety of tips, including round pads intended for smoothing heels, that are great for smoothing seams. Nail buffers are much smaller than motor tools, so they get into tight places such as intakes. I've found them in chain drug stores. Now, I wonder how I ever got along without them.

– Ned Barnett
Las Vegas, Nev.

A tip for keeping tips clear

I hate the way my super-glue applicator tips and tubes get clogged, becoming worthless every time I use them. To prevent this, I filled a small jar, like the ones minced garlic is sold in, with acetone (nail-polish remover). When I'm finished using an applicator tip or tube, I just drop it in the acetone and close the jar. Next time I'm ready to use it, I fish it out with tweezers, drain it on some tissue, and it's ready to go — just as open and clean as it was when it was new.

– George Shaeffer
Redington Beach, Fla.

Power wash for plastic parts

Cleaning parts before assembly is important to remove mold-release agent residue and ensure proper paint and cement adhesion. Traditional cleaning methods employ soap and water in a bucket or sink — effective, yes, but there is always a risk of losing parts.

Inspired by a touchless car wash, I use my airbrush and a solution of lemon-scented ammonia to spray contaminates from my plastic parts. I imagined it would be a messy process, or even labor intensive, but it isn't.

I spray the parts on a towel, dip them in a bath of warm, clear water, and set them in a dust-free place to dry.

For large parts and sprues, I set the pressure at 40psi and spray both sides with ammonia. For delicate parts, I lower the pressure.

I find this gets the cleaning solution into nooks and crannies for better cleaning. Ammonia cleaning solutions are available from grocery and discount stores; a gallon bottle will clean a lot of models.

One word of warning: Don't let ammonia sit in your airbrush for any length of time, as it will etch the fine brass fittings.

– John R. Groves
Chili, N.Y.

Kenny and Jon have discovered a tasty way to add detail to their models: the heavy foil lids found on many frozen meals.

Pasta foil ... I've a need to detail a model

Being a science-fiction modeler, I do a lot of scratchbuilding. So, I'm always on the lookout for inexpensive materials — and they're almost always found in the most unexpected places around the house.

Take, for example, those large, frozen lasagnas sold at the supermarket and packaged in a disposable aluminum pan with a heavy foil lid. The lid is nearly flat, and it's thicker than rolled aluminum foil. It's several aluminum cans' worth of material, minus the trouble and danger of transforming aluminum cylinders into aluminum sheet. (Don't bother with the lasagna pans, though; they're a lost cause once you're through with dinner.)

Five minutes in the sink to scrub away the lasagna from the foil lid, followed by another two or three minutes of flattening with a rolling pin, yields a very large sheet of heavy aluminum foil. It's enough to make many Panzer fenders, starship hulls, or appliqué armor for that Battlemech model on your bench.

– Kenny Haverly
Bardstown, Ky.

More frozen-food foil info and ideas

I've found a great source of medium-weight aluminum that has all sorts of uses and will please your stomach as well! The foil lids for Stouffer's lasagna and enchilada trays are made of a medium-weight aluminum that is about the thickness of photoetched brass. It can be cut with scissors and easily formed into seat harnesses or any other metal item you need. *Bon apetit!*

– Jon Campidonica
Modesto, Calif.

Dragon DKM *Scharnhorst* 1943

Commissioned in 1939, DKM *Scharnhorst* and her sister ship, *Gneisenau*, were an unusual combination of speed, heavy armor, and small main guns; they were battleship-sized and could make 33 knots, but main armament was nine 283mm (11") guns. Although *Scharnhorst* was considered a lucky ship by her crew, she met her end on December 26, 1943, in the Battle of North Cape against the British Royal Navy battleship HMS *Duke of York* and cruisers HMS *Belfast*, *Norfolk*, *Jamaica*, and *Sheffield*. Only 36 from a crew of 1,968 survived as the *Scharnhorst* fought to the very end and sank with her propellers still turning.

Dragon's DKM *Scharnhorst* 1943 is a standard-setter. The one-piece upper hull is fantastic! The flare of the bow and the swell of the hull aft of the anchors are beautifully molded. The main deck has the proper camber. The wood-planked anchor ways are accurate, the splinter shields and bulkheads are almost scale thickness, and the DS-vinyl blast bags on the larger guns are beautiful. And all the guns, from 20mm to 11", have open bores! I used Cyber-hobby's excellent photoetched-metal detail set on this review.

THE END RESULT IS A ONE-OF-A-KIND, MUSEUM-QUALITY MODEL

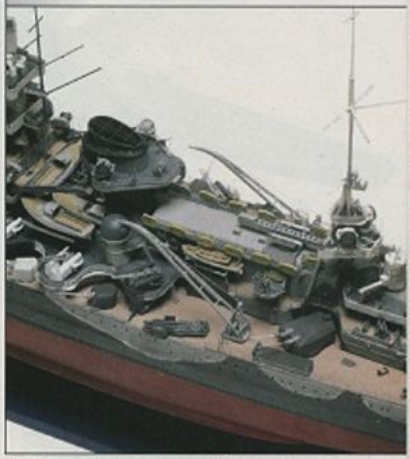
Parts fit is exceptional throughout, and there are virtually no ejector-pin marks, mold lines, or sink holes.

The Dragon and Cyber-hobby photoetched-metal parts were easy to work with and fit perfectly. The ship can be built as a waterline or full hull model; a stand is included. Detail is added to the deck after painting.

Nevertheless, the kit has a few drawbacks. Chief among these is the instruction sheet: There are nine pages and 19 steps with small diagrams to place 1,300 parts, nearly impossible to figure out due to the complexity of the drawings, with some items blocking important locating points. Parts appear on the assembly with no part numbers, and there are a few misnumbered, misplaced, or missing parts.

Among the errors in the instructions: The smokestack divider assembly has two misplaced parts and is slightly oversized; modifications will be needed to fit it into the stack and cap. The port and starboard boat racks should be mounted before the center boat rack, which attaches to small dimples on the sloped stack section. The smokestack assembly has to go down before vent parts K22 and K23. Part K73 is the splinter shield for the port, stern, dual 37mm gun station, but is not called out. Decking for the catapult operator is shown but not included. Extra care must be used to assemble the gun deck and hangar-deck houses or they will not fit into the main-deck recesses properly. The lower hull is devoid of any detail.

Dragon's painting instructions consist of a color profile; there are no color callouts on the instructions, leaving you to guess colors for the smaller



The ship can be built as a waterline model or with a full hull including nicely rendered screws and rudders (above). The rest of the ship is crammed full of plastic and photoetched-metal details.

details. Color callouts are given for Aqueous Hobby Colour, Mr. Colour, and Model Master, but most colors will have to be custom-mixed. I used an enlarged printout of A.Toller/A. Bonomi's profile for hull masking and color reference, mixing most of my colors with Polly Scale acrylics. I airbrushed major assemblies but hand-brushed the superstructure camouflage.

All of the weaponry is static. The 105mm high-angle guns have no positive barrel mounts and can't be elevated without modification, the 20mm guns are slightly over-scale, and no shields are provided for the smaller guns. Aftermarket photoetched metal is required to complete the railings. The bow and stern jack staffs were not mounted in 1943, despite the instructions. The kit has shallow, indistinct portholes.

I consulted the instructions for subassemblies, but I built from the 01 deck up, bow to stern. I painted and camouflaged each level, placing whatever photoetched metal could be safely added.

My best reference website was www.scharnhorst-class.dk. Another useful site was www.tankwerkz.com, with CAD drawings of many details and their location. The model scales out to published dimensions.

This kit requires dedication, a large work area, and many hours for assembly and painting. But the end result is a one-of-a-kind, museum-quality model of a beautiful ship with stunning detail. I put about 160 hours into the build, about twice my average for a ship this size, but considering the parts count and detail level, even that was rushing it.

Were it not for the large number of parts and the lack of good instructions, this could have been a fantastic kit for any modeler beyond the beginner; as it is, I can only recommend it to experienced modelers. Your results will depend on your skill, tools, and dedication – not on the kit.

– Bruno Schielzeth

Kit: No. 1040 **Scale:** 1/350 **Manufacturer:** Dragon, from Dragon Models USA, 626-968-0322, www.dragonmodelsusa.com **Price:** $159.95 ($19.95 for Cyber-hobby photoetched-metal set) **Comments:** Injection-molded, 1,298 parts (356 photoetched-metal; 56 in Cyber-hobby set; 21 vinyl), decals **Pros:** Stunning molded detail; good fit; nice photoetched-metal parts; impressive size **Cons:** Poor instructions; microscopic pieces; shallow portholes

Tasca M4A3E8 Sherman

The ultimate World War II Sherman tank was the M4A3E8. Its improvements in armor, armament, internal protection, and suspension directly addressed weaknesses in earlier Shermans. It reached the U.S. Army in Europe in December 1944 and went on to serve in many postwar armies.

The "Easy Eight" variant of the Sherman has been a popular subject with kit manufacturers since the 1960s. But Tasca's release creates a new benchmark for accuracy and detail.

The parts are cleanly molded in dark olive plastic. Details and options represent a WWII version with T66 steel track. Both the suspension and tracks are posable. The commander's cupola is molded in both clear and olive-colored plastic. Photoetched-metal parts are provided for periscope and headlight guards. All hatches are separate parts. Alternate gun barrels are included, as is Tasca's signature fuel/water can set. There are no crew figures, though.

I started construction with the lower hull. Tasca takes a different approach here, as the lower hull comprises numerous flat plates. I found they all attached to each other positively — no problems at all.

The exhaust deflector builds up accurately from several curved parts to capture the unique shape. It's designed to roll up under the rear hull plate, like the real thing.

Moving on to the suspension, there is a fair amount of work here with all the wheels and bogie units. The 11-part HVSS bogies look complicated, but they build up quickly and easily — and if you build them correctly they will be movable, providing a suspension that can be articulated. If you don't plan to articulate the suspension, glue them into their flat position; this keeps them from moving when you install the tracks. Be careful with the wheel axles; they are a very tight fit.

The T66 tracks are two pieces per link and designed to be workable. Small pins link the tracks, which are then trapped by the inner track pad. Tasca has neatly designed them so the ejector-pin marks are on interior surfaces! I spent a fair amount of time assembling the tracks: There are 77 links per side. When you do the math, that's 308 parts — whew!

EJECTOR-PIN MARKS ARE ON INTERIOR SURFACES

The turret assembled quickly without any problems. Unlike many other 76mm Sherman kits, Tasca's tank captures the mantlet profile. You get a choice of two 76mm barrels, one with a muzzle brake, the other just the protective collar. The turret-mounted M2 .50-caliber machine gun is a nicely detailed beauty with a hollow cooling jacket and a choice of barrels.

I painted my Sherman with various shades of Tamiya olive- and sand-colored paints. Decals are given for five WWII vehicles. The decals are neatly printed, particularly the stars, which have no overlapping decal film. These applied well with a bit of decal solution.

Kit: No. 35-020 **Scale:** 1/35
Manufacturer: Tasca, www.tasca-modellismo.com, from Pacific Coast Models, 707-538-4850, www.pacmodels.com **Price:** $59.95
Comments: Injection-molded, 894 parts (13 photoetched-metal, 24 vinyl), decals
Pros: Great molding and detail; optional parts **Cons:** No figures

My primary reference was Squadron/Signal's "Walk Around" title *M4 Sherman*, by Jim Mesko (Squadron/Signal, ISBN 978-0-89747-410-8). Also very helpful was *M4 (76mm) Sherman Medium Tank, 1943–65*, by Steven J. Zaloga (Osprey, ISBN 978-1-84176-542-6).

I completed my M4A3E8 in 30 hours. It's the best Sherman kit I have ever built, with crisp detail and superb engineering, and arguably the best Sherman kit available today. This one's not for the novice, but experienced armor modelers who enjoy WWII subjects will want to add this Sherman to their collection.

–Jim Zeske

HobbyBoss Messerchmitt Me 262A-1a/U4

To combat the hordes of Allied bombers over Germany late in World War II, at least two Me 262A-1a airframes (Wnr 11899 and Wnr 170083) were test-fitted with 50mm Mauser Mk.214A-V3 cannons. To do this, the entire nose had to be redesigned with a pronounced hump to cover the gun and nose gear that swiveled 90 degrees to retract. The resulting aircraft was designated Me 262A-1a/U4 "Bomber Destroyer," intended to act as *pulkzerstörer* (formation, or pack, destroyer).

HobbyBoss' new kit represents the second such aircraft, Wnr 170083. After its capture it was dubbed *Wilma Jeanne*, for the wife of Col. Harold E. Watson, leader of a volunteer squadron of American pilots who learned to fly German aircraft so they could be shipped to the U.S. for study. The aircraft, renumbered V083 and renamed *Hunter II*, crashed on its way to Cherbourg, France.

Inside the box, sprues are separately bagged. A single sheet of instructions covers a six-step assembly and decal application. A four-view color and markings sheet is printed in full color and includes a list of colors referencing five brands.

The decal sheet includes swastikas, the instrument panel, and side panels in the cockpit. Considering the big bubble canopy, it is a shame no seat harnesses were included. (I added photoetched-metal parts from my spares box.)

Parts are cleanly molded and nearly free of mold lines and flash, the engraved panel lines are consistent, and the detail is good. Optional parts include a metal or plastic nose-gear well and two styles of nose wheels; I installed the metal well, which helps keep all three wheels on the ground.

The instrument and side console decals required several applications of Micro Sol to settle them over the parts' raised detail. The finished cockpit, gun tray, and rear fuselage equipment made the fuselage halves a very tight fit. I used rubber bands, bar clamps, alligator clamps, and lots of solvent to join the halves.

The gun cover, fuselage hatch, and windshield were poor fits. The first two fit below the surrounding surface, and the windshield sits too high. I shimmed the gun cover but missed the fuselage hatch by gluing it from the inside, not noticing its incorrect position until too late. I left the windshield as it was.

The upper wing panel was slightly off, but the horizontal stabilizers fit perfectly. Wing-to-fuselage fit was good, and there were no problems with the landing gear or their doors. The R/JATO pieces (Part G15) were unexplained and not in my references. Tabs on the canopy go into slots in the starboard canopy rail for open display. The tabs are easily removed if you want the canopy closed.

The decal images are exceptionally thin and tend to curl under the backing paper during application. (Sliding the image into a puddle of water on the model solves that problem.) Instructions call for Decal 14, a fuel triangle, to be applied to the nose wheel; it probably should have said Decal 30.

I painted with out-of-production Floquil Military and AeroMaster Warbird colors. References leave doubts about how this particular plane was painted; I followed the instructions with RLM 83 dunkelgrun. In detail painting, some parts have no color callouts (G37 and G21 for example).

The finished model may be several scale inches small according to published references, and the troublesome fit of some parts may challenge modelers, but this kit should still attract Luftwaffe enthusiasts who have some modeling experience.

– Allan F. Jones

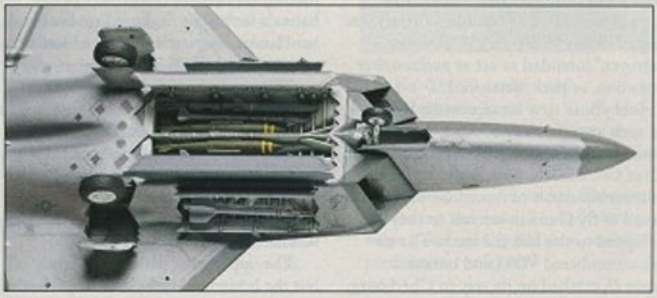
Kit: No. 80372 **Scale:** 1/48
Manufacturer: HobbyBoss, www.hobbyboss.com, from Squadron Mail Order, 877-414-0434, www.squadron.com **Price:** $36.99
Comments: Injection-molded, 134 parts (1 cast metal), decals **Pros:** Clean moldings; clear parts; excellent decals
Cons: Poor fit of gun cover, fuselage access panel, windshield/gunsight cover; insufficient color callouts; minor mold sinks from the main gear wells are visible on the wings' top surfaces

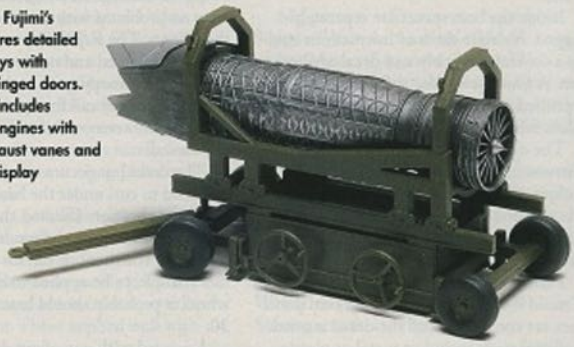
Fujimi F-22 Raptor

There's a brand-new 1/72 scale F-22 Raptor. That's not big news; there are a lot of them out there. What *is* big news is that this is the first all-new aircraft kit from Fujimi in more than a decade!

The kit has a lot of great features, most noticeably the subtly raised and recessed panel detail, allowing you to create that smooth, stealthy skin and achieve a good-looking model. Fujimi's Raptor comes with a pair of well-detailed engines featuring movable, vectored-exhaust petals and a 35-part engine dolly that even has movable steering. The fuselage halves are molded with the wings, effectively burying assembly joints along the leading and trailing edges, the nose chine, and behind the stabilizers. The fit of the major assemblies was near perfect, with only minor cleanup of the glued seams. Separate sets of gear doors and weapons bay doors are provided for posing the model in flight and buttoned up, or opened to see interior detail. Weapons include a pair each of GPS-guided bombs, AIM-120 AMRAAMs, and AIM-9L and AIM-9X Sidewinders.

The cockpit is comprehensive, with a decal for the raised-detail instrument panel, and a six-part ejection seat – but no harness on the seat. Duplicate sets of clear parts provide your choice of clear or tinted cano-





Underneath, Fujimi's Raptor features detailed weapons bays with accurately hinged doors. The kit also includes removable engines with posable exhaust vanes and a dolly for display

pies. I applaud Fujimi's effort to make a realistically hinged and movable canopy, but I couldn't get mine to work. It's better to leave the hinge parts out if you want the canopy closed, and the hinge parts fixed if you want it open.

The snaky engine inlets fit well, but their installation is not clearly shown in the too-small instruction diagrams. There were a couple of large ejector-pin marks in the intakes that had to be cleaned up. Installation of the main-gear struts in the separate wells is fiddly. Installing the four-part, nose-gear strut assembly was difficult, as there are five tiny pins that must be inserted in slightly undersized holes that are crowded into the nose-gear well.

THE SNAKY ENGINE INLETS FIT WELL

A few errors in the instructions can cause confusion. The parts numbers for main-weapons-bay doors C23 and C24 are transposed, as are main-gear-strut covers C1 and C2. The drawings don't show the angles of the weapons-bay doors when they are posed opened. Also, the forward wheel kingpins for the engine dolly lack numbers in the diagram; they are F17 and F18.

Painting a Raptor is tricky. From some angles, it looks gray; turn your head and it's silver. No kit manufacturer has yet provided accurate color recommendations (to my eye, anyway), so I tried something different. I painted the entire model with Model Master enamel 36251 aggressor gray, then masked off all the areas that would remain this slightly warm, light gray: radome, canopy frame, intake lips, and flying-surface edges. Then I sprayed the darker camouflage "colors" on the top surfaces with Metalizer titanium. Next, I drew the dark camouflage segments on a manila envelope and cut them out, then suspended them slightly above the surface with bits of sticky putty. I sprayed Metalizer dark anodonic gray for the lighter metallic. I coated the entire model with Metalizer sealer to ready it for decaling. In retrospect, the lighter metallic shade should be darker; next time, I'll mix the two Metalizer shades to get closer the right look.

The decals are well printed and feature markings for Raptors from Langley, Holloman, and Elmendorf airbases. The decals went down easily on flat areas, but they didn't like conforming to the few irregular surfaces. Many of the decal grilles and panels were not the same shape as the recesses for which they were intended.

The engines are a tight fit in the fuselage. But they can be removed, and you can pose one on the dolly with little trouble.

Kit: No. BSK1 **Scale:** 1/72
Manufacturer: Fujimi, www.fujimimakei.com, from Dragon Models USA, www.dragonmodelsusa.com **Price:** $50
Comments: Injection-molded, 167 parts, decals **Pros:** Superfine recessed and raised panel details; separate engines; engine dolly; posable ailerons and rudders; movable flaps; excellent fit **Cons:** Fiddly assemblies; unclear assembly diagrams; some detail decals don't fit

The project took 31 hours. Assembly was quick at first, but the installation of the weapons and doors slowed things down. The larger part of the project was painting and decaling. The result is the best F-22 Raptor in 1/72 scale. Welcome back, Fujimi!

– Paul Boyer

HobbyBoss German VK1602 Leopard

There has been a debate on the Internet regarding the pros and cons of model companies producing kits of the "paper panzers," those German tanks that never made it from the drawing board to production in World War II. I, for one, like the idea of using my imagination in painting these kits of tanks that might have been produced if the war had lasted.

Kit: No. 82460 **Scale:** 1/35
Manufacturer: HobbyBoss, www.hobbyboss.com, from Squadron Mail Order, 877-414-0434, www.squadron.com **Price:** $48.99
Comments: Injection-molded, 656 parts (27 photoetched-metal), decals
Pros: Easy-to-use photoetched metal; good molded detail; includes hatch-interior detail **Cons:** Poorly rendered exhaust; oversized smoke-discharger tubes; missing cast texture

With its Leopard, HobbyBoss has joined the growing parade of paper panzers. The kit is molded in yellow plastic, with individual track links in light brown plastic. There are ejection-pin marks, but they're easy to fill. The track links have a small amount of flash. All the hatches have inner-surface detail, and weld seams are well represented. The photoetched-metal details are well engineered and easy to use, even for beginners. A color sheet shows one paint scheme.

YOU CAN PAINT IT ANY WAY YOU CHOOSE

The directions include optional chassis-assembly instructions, with two options each at steps 2 and 3. Option 1 is for a suspension with three inner and outer road wheels and two middle road wheels. The second option is for two inner and outer road wheels and three middle road wheels. The rear idler is different for each option. I chose the second option and left the road wheels off the suspension to ease painting.

I also left small parts off the hull until it was completely assembled. I glued the rear hull plate (Part C15) to the lower hull after the upper and lower hulls were glued together. This allowed access to glue parts C30 and C31 to the upper and lower hull at the same time, instead of gluing these parts to the upper hull first as stated in Step 8. I left the front part of each fender (C18 and C19) off, allowing me to add the tracks after painting. The knockout marks on the underside of the hull, above the tracks and on the underside of the fenders, were filled with super glue and sanded smooth.

You have a choice of photoetched-metal or plastic wing nuts to simulate fasteners at the front of the fenders. I chose the plastic parts, which looked more three-dimensional to me. Drilling small holes in the fenders gave me more bonding surface for the little wing nuts.

The mufflers are assembled by adding the exhaust pipe to a solid piece of the armored housing. I gave the housing a cast texture by brushing on liquid styrene glue

and stippling it with an old, stiff brush.

The track assembly takes more time to build than the rest of the model. Each track link has two guide horns that need to be glued together. The guide horns have detail only on one side, so make sure that side faces the outside of the track link. There is a knockout mark on the inner surface of each link that should be removed. I assembled each side in three subassemblies that I painted and added to the model after the rest of the kit was painted and weathered.

The fit between the upper and lower turret halves was poor and needed filler. The turret interior includes a gun breech, inner hatch detail, and vision blocks. I added cast texture to the gun mantlet.

The coaxial machine gun is molded with an open muzzle. You can choose plastic or photoetched metal for the smoke discharger bracket; the photoetched-metal brackets are fragile, so be careful when handling the turret. I broke these off too many times to count. The smoke-discharger tubes are very thick and would best be replaced by aftermarket items.

Since this is a paper panzer, you can paint it any way you choose. I followed the color scheme on the color insert: Tamiya dark yellow, red brown, and olive green (typical three-color German WWII camo colors) and painted the hull bottom and inside of the road wheels with Floquil red oxide. I used Tamiya's clear blue on the periscopes. After I gave the model three coats of Mig Productions tan filter, pinwashes of Mig's neutral wash, dry-brushing, and weathering powders finished it off.

The decals include three German crosses and a set of big, outlined numbers for the turret. The decals are thin and adhere to the model with no silvering.

Most of the information I found on the Internet and in books showed the Leopard in line drawings and sketches, so the scale accuracy of the kit is not measurable. However, HobbyBoss seems to have done a good job rendering in plastic what is shown in the few drawings of what this tank might have been.

It took me 29.5 hours to build the Leopard, mainly assembling the tracks. The easy assembly and good overall fit of the parts would make this a good kit to introduce beginners to photoetched-metal parts and individual track links while building a distinctive model. HobbyBoss' kit of the German VK1602 Leopard will stand out in any collection.

– Mike Scharf

Airfix *Trafalgar*-class submarine

The seven boats of the *Trafalgar*-class have served the Royal Navy's fast-attack submarine role since the early 1980s. This kit marks Airfix's first foray into submarines, and it's a nice freshman effort.

Molded in blue-gray plastic, the parts show sharp if slightly heavy-for-scale engraved panel lines on the deck. *Trafalgar*-class subs are covered with anechoic (sound-absorbing) tiles designed to reduce the vessel's active and passive sonar signature. They are visible in photos, and the Royal Navy boats often show sections of damaged or missing tiles. Airfix hasn't attempted to replicate these, either in place or missing, but that's not a bad thing — it would be easy to overdo them, and they are probably better represented with paint.

The kit has several options, including deployed or stowed bow planes and flagstaffs. Two different sail tops are included, one with everything closed up and stowed, the other with the periscopes, snorkels, and everything else deployed. The kit also provides two different propulsion systems — the open-bladed screw used on HMS *Trafalgar*, and the pumpjet system used on subsequent vessels of the class.

Decals represent depth markers and hatches and provide names of all seven submarines in the class.

Construction is straightforward. I anticipated problems with the two-part lower hull, but the soft plastic responded very well to Tamiya liquid cement and the gap all but disappeared. I opened the holes for the bow planes. Both the bow and stern planes are designed to be movable, but I found the plastic a little flimsy and the fit a little tight, so I glued them in place. The single-piece upper hull attached as cleanly as the lower hull halves, although I used rubber bands to ensure tight joins. A little putty eliminated any trace of the seams in the hull.

The sail, fins, and propulsion unit attached cleanly. It took me less than two hours to have the sub ready to paint.

After a couple of shades of black and Pledge Future floor finish, I applied the decals, which performed very well. I used Micro Sol to get the hatch marking to conform to molded detail. I was impressed by the brightness of the red and yellow markings. After adding the sail-top equipment and setting the model in its sturdy cradle stand, I had an HMS *Turbulent* ready for display.

At 9¾" long, Airfix's *Trafalgar*-class sub isn't a big model. But it's an easy build with enough potential for detailing and display to provide plenty of fodder for advanced modelers.

– Aaron Skinner

Kit: No. A03260 **Scale:** 1/350 **Manufacturer:** Airfix, 44-1428-701191, www.airfix.com, available from Hornby America, 253-922-7203, www.airfix-usa.com **Price:** $11.75 **Comments:** Injection-molded, 41 parts, decals **Pros:** Simple construction; propulsion and equipment options; good fits **Cons:** Some detail simplified

Valom Antonov An-2

Probably the only post-World War II military aircraft that can be outpaced by a blimp, the An-2 Colt continues to serve air forces around the world.

Despite the thousands produced, the Colt has been ignored in the modeling world until Valom chose the An-2 as its first release in 1/48 scale — and a big release it is, too. No dainty biplane, in 1/48 scale it has a wingspan of almost 15".

Kit: No. 48001 **Scale:** 1/48 **Manufacturer:** Valom, www.valom.net, available from GreatModels, 800-619-3402, www.greatmodels.com **Price:** $75 (est.) **Comments:** Injection molded, 172 parts (8 resin, 11 photoetched metal), decals **Pros:** Good fit for a short-run kit; good detail **Cons:** Canopy difficult to fit; no attachment points for gear

The first of several An-2s from Valom is a military version. The kit provides a plethora of props from which to choose, including wicked-looking scimitar blades. However, the two decal options cater to only one set of blades, as clearly pointed out in the instructions. The colorful decal sheet is well printed and includes a rather bizarre lizard camouflage from the Polish air force as well as a standard Russian air force scheme.

ONLY TWO MAKE-OR-BREAK ASPECTS OF THIS KIT

Among the 172 parts is a handful of resin for various intakes and exhaust, instrument console, and petite blade-pitch paddles. A small photoetched-metal sheet has seat belts and other fine details. And then there is the canopy: Valom realized shortly after releasing the kit that the canopy was flawed — it was far too wide, and the front windscreen sloped much too steeply. To its credit, Valom retooled the clear parts. If you have an early version of the kit, you can contact Valom through an e-mail on its website for a free replacement.

Construction progresses quickly, thanks to a wide-open cockpit that allows parts installation after the fuselage is together. There is minimal detail for the rear, including seats, floor, and a bulkhead. There are no positive locators, and I managed to knock my bulkhead out — I left it out without any trouble, as you can't really see that far into it anyway.

The fit was fine, although the root fairings for the stabilizer are molded at slightly different angles on each side of the fuselage. There are upper rear wing fairings that must be put in place on the fuselage, and it takes a lot of fiddling and trimming to get the wing to seat properly. Once that's accomplished, the wings do fit well. But the separate ailerons and flaps need trimming to fit snugly to the wing. I left the leading-edge slats off until after completing the rigging, since I snuck a couple of the wires through

the wing hidden beneath the slats. There are really only two make-or-break aspects of this kit — the canopy and the landing gear. The new upper portion of the canopy can be made to fit quite well by carefully trimming a bit of plastic at the front of the instrument coaming and following Valom's instructions for removing material at the upper wing root. The directions aren't very clear, but you can figure it out by dry-fitting the parts.

The real problem is the fit of the lower transparencies. Due to the complicated nature of the real thing, Valom has made the lower portion of the "bay window" separate pieces. But because the plastic used is somewhat thick and the angles involved are awkward, the parts won't fit without significant trimming. I ran out of hassle time with mine, but I'm sure careful knife work would save the day.

Each landing gear consists of three separate struts, with the main gear leg the only one having a positive locator. You have to drill your own holes in the wing to accept them. Luckily, the main leg is strong — like the real biplane, I guess. Similarly, the struts create a strong bond for the upper wing.

Last up for construction was the prop. This needs careful alignment, as all blades are separate and there are no attachment guides.

Painting was straightforward, but plan to take some time — this is a big canvas. Surface detail looks good under paint, and the decals performed very well over the numerous panel lines and wing structure. Once the decals were set and a flat coat applied, I did the rigging with monofilament.

After 23 hours of tweaking, fitting, trimming, and finishing, I had a rather large addition to my shelf that looked very much like a Colt. The dimensions scale out closely, and the detail is sufficient to make most happy. So, provided you're willing to spend time checking and adjusting fit, Valom's Colt will make a good addition to your collection.

– Chuck Davis

Zvezda Mil Mi-24V/VP "Hind-E"

The NATO term is "Hind," but the Russians nicknamed the Mi-24 helicopter "Crocodile." The Mi-24 achieved notoriety as an air-support gunship for the Soviet Union in Afghanistan.

Zvezda's 1/72 scale Mi-24 is molded in medium gray plastic with light, recessed detail that can disappear into the soft plastic with sanding. By the same token, the soft plastic is easy to rescribe and allows liquid cement to bond especially well. The biggest problem with the softness is that major parts, like the main rotor assembly, are fragile. I should know: I broke three of the five blades. The vinyl-like clear parts have excellent clarity and surface detail, and react well with Pledge Future floor polish.

Choose your configuration and options before beginning. You can have the cockpit, cabin doors, and engine compartment open or closed, and these choices can complicate the assembly sequence. I expected trouble with the fit when I chose to close everything, but the parts fit surprisingly well with little filler required. Weapon options include two different nose cannons for either a Soviet army aviation or a Russian navy version.

Interior detail is hit and miss, with the cockpit as a miss. It has basic detail; decals depict instrumentation. I used masking tape to add seat belts. The cabin detail is a little better, but you won't see much of it if you close the doors. Same is true for the engine area. But if you leave it open, you can show off good detail in the two engines and the main-rotor housing.

The instructions are unusual, making the assembly sequence hard to understand as I worked through the 35-step directions. In the left margin are subassemblies that need to be accomplished before finishing the main instruction step. In addition, some of the steps guide you in assembling the model with all the doors and panels open to show all the extra detail within.

The kit provides markings for two Soviet Mi-24 units that operated in Afghanistan and one Russian navy Mi-24. The decals went on fine and reacted well to Solvaset. I used Model Master paints as suggested in the instructions.

Despite the large quantity of parts, a confusing instruction sheet, and a complex series of options, I really enjoyed building the model. It took me 25 hours to complete — not a quick build, but one that produces an exceptionally detailed model of a very important Soviet helicopter. It is accurate according to the drawings in *Mi-24*, by Jiří Bašný, Jiří Brázda, Michal Ovčáčík, and Karel Susa (4+ Publications, ISBN 978-80-900708-2-0). Anyone with a little modeling experience won't have any trouble assembling it. I hope that Zvezda will continue making Soviet helicopters, including the early Mi-24 Hind A.

– David P. Anderson

Kit: No. 7293 **Scale:** 1/72
Manufacturer: Zvezda, www.zvezda.org.ru, from Dragon Models USA, 626-968-0322, www.dragonmodelsusa.com
Price: $28.50 **Comments:** Injection-molded, 279 parts, decals
Pros: Numerous options; detailed engine
Cons: Hard-to-follow assembly sequence

Kit: No. 201-98
Scale: 1/8
Manufacturer: Monarch, www.monarchmodelcorp.com
Price: $27.99
Comments: Injection-molded, 40 parts **Pros:** Great sculpting; intuitive construction; Aurora-style display and accessories **Cons:** Challenging gaps

Monarch Sinbad

For years, in books, movies, and a TV series, Sinbad the Sailor braved uncharted seas and battled evil sorcerers and their vile henchmen, all to save beautiful girls and load his ship with chests of treasure. Now, Sinbad comes home to modelers in this plastic kit from Monarch Models.

Sinbad includes 40 fantastically molded parts, in gold, copper, and jade-colored plastic. The instructions, printed in full color, are rendered to recall the old Aurora kits and include a painting guide. The face is particularly well detailed, and the figure's stance is attractive and suitably dramatic.

Assembling Sinbad wasn't so much an adventure as it was a pleasure cruise. The engineering is as straightforward as you can find in a kit today, with parts logically matched on sprues and easily paired. Experienced modelers could assemble Sinbad simply by looking at a picture of the finished model.

No matter how well-engineered a kit is, manufacturers must make compromises; there are a couple of significant ones on Sinbad that require particular attention. The first is that since Sinbad is depicted with a bare chest, there is no natural seam to hide the join between the chest and neck. Similarly, Sinbad holds a lamp in his left hand. To accommodate the lamp, the thumb was molded separately. Again, with no natural folds to hide the seam, the join is prominent. Filling these gaps with Milliput, a two-part epoxy putty, made it possible to shape and blend those gaps with sculpting tools.

However, most of the parts fit well with careful dry-fitting minimizing the gaps. The lower legs are not keyed, so be careful about the figure's fit to the base. We left them loose until the display was built, then used thick, slow-setting plastic cement to adjust the fit. Epoxy cement could also be used to provide a lot of strength in those areas.

The straightforward construction means you can concentrate on painting and finishing, the keys to good figure models. The best course for painting is leaving the model in two major subassemblies, the figure and the base. Scenery dressing, like the spider, severed arm, and trees, should be painted separately, too. Once these pieces are finished, you can put them all together and take care of any touch-ups.

We airbrushed Sinbad with acrylics from Liquitex, Dr. Ph. Martins, and Golden; Testors gold lacquer; and Alclad II lacquer for the scimitar blade.

While figures are considered one of the hardest model types to finish successfully, Sinbad is one that novices and advanced figure modelers should enjoy. Its simple design and build will give newcomers confidence while learning to build, while experienced builders will enjoy the detailed parts and a build that allows them to show off their finishing techniques.

– Tim Kidwell and Jay Smith

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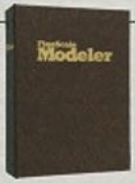

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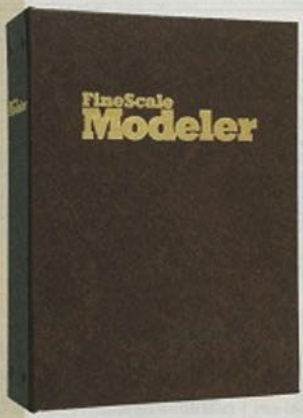

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COMING EVENTS

CA, VENTURA: ModelFest '11. Ventura Fairgrounds/ Seaside Park, 10 West Harbor Blvd. February 27, 2011 from 8:30am-3:00pm. Admission $6.00 per person. State parking fee additional. For more information contact Vernon Mortensen or Stuart Mackie at 805-658-8138.

GA, ATLANTA: AMPS Atlanta will hold its third annual modeling contest and exhibition February 18-20, 2011. New, much improved location- Atlanta Marriott Century Center, 2000 Century Blvd. This years theme - Operating Barbarossa. "Tune up" for the AMPS Nationals. Visit: www.ampsatlanta.org for all the details and contact information.

MI, BAY CITY: Mid-Michigan Model Makers 26th Annual Model Contest and Show. Knights of Columbus Hall, 360 S. River Road. Saturday, February 5, 2011. Registration 8:00am-11:00am; Judging 12:00pm-4:00pm; Awards at 4:00pm. Free general admission. Visit: http://www.midmichiganmodelmakers.com For more info contact John Martin at john_martin@midmichiganmodelmakers.com or 989-695-5028.

MN, ROCHESTER: "Hope it don't snow show" Ramada Hotel and Conference Center, 1517 16th Street SW. Saturday, February 12, 2011. Registration begins at 9:00am. Presented by the IPMS Zumbro Valley Scale Modelers. Contact George Romano 507-281-4175.

ND, FARGO: Cabin Fever Classic contest & swap hosted by Red River Scale Modelers. West Acres Regional Shopping Center, 3902 13th Ave. South Community Room, lower level, JCPenney Wing. Saturday March 5th, 2011. Registration 10am-noon. Visit: http://rgmrram.webs.com/cabinfeverclassic.htm for details.

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History You Can Model

By Mark Hembree

Stuart M3/M5

The first tanks manned by Americans in combat were Renault FT17s of the 1st Tank Brigade, led into battle by then-Lt. Col. George S. Patton at St. Mihiel on Sept. 12, 1918. Patton would go on to become a general – and the FT17 would serve as a point of origin in the evolution of the M3/M5 Stuart light tanks.

Combat cars

With the National Defense Act of 1920, Congress decreed all tanks should be assigned to the U.S. Army infantry. That left the cavalry to invent a term for the vehicles it wanted – *combat cars*, one of many prevaricating terms in arms development between world wars.

Research and development culminated in the combat car M1, the first vehicle to resemble the Stuart. More changes, notably to the suspension and transmission, led to combat car M2, which developed into the M2A2, informally nicknamed "Mae West" for its twin turrets. By then, the M2A2 and M2A3 were classified as light tanks.

To war

Early in 1939, the U.S. Army ordered thicker armor and more powerful weapons for the M2A3. The resultant M2A4 sported inch-thick armor on vertical surfaces, and a single, two-man turret with a .30-caliber machine gun and 37mm cannon. The M2A4 entered production at American Car & Foundry in May 1940; 365 were built by March 1941, 36 of them for Great Britain at the start of the Lend-Lease program. The U.S. Army used them for training; the U.S. Marine Corps used them on Guadalcanal, too.

M3

Experience brought changes to the M2A4, notably in thicker frontal armor and a trailing idler that reduced ground pressure and smoothed the ride. Designated M3, the new tank entered production in March 1941; 4,526 gasoline-powered and 1,285 diesel-driven M3s were built.

Great Britain got 1,784 gas plus 50 diesel M3s. The British named the tank "General Stuart" after J.E.B. Stuart, cavalry hero of the Confederacy in the American Civil War; the gas-powered M3 was Stuart I, the diesel, Stuart II. British tankers, pleased with its performance in desert warfare, called it the Honey.

With its sand skirts, markings, and desert color, the Stuart light tank at the Aberdeen Proving Ground recalls the days when British tankers called it "Honey." U.S. Army photo.

Lend-Lease Stuarts were not as well-regarded by the Soviets, who disliked the narrow tracks and finicky fuel system.

Early on, welding replaced rivets on the turret plates to reduce the danger of pieces being blasted into the turret. About halfway through production, the welded turret plates were replaced by a rolled-steel piece with superior ballistic performance.

In the M3, the turret traversed manually; commander and gunner had to move with it. With the addition of a hydraulic-powered turret and a gyrostabilizer for the gun, the cupola was removed to make room for a turret basket, floor, and seats. The upgrade, M3A1 – in Great Britain, the Stuart III (gas) and IV (diesel) – was produced from May 1942 to February 1943. Diesel Stuarts were cancelled in July 1943.

M5

Dodging wartime demand for air-cooled radial engines, the Army ordered an M3 with Cadillac engines and a Hydra-Matic transmission. The result ran quieter, cooler, and left more room inside – and it was easier to train on an automatic. Since the designation *M4* already belonged to Sherman tanks, the new model was called M5. Cadillac began building tanks at General Motors in Detroit in April 1942; the GM plant in Southgate, Calif., also began making them that summer, as did Canadian tractor manufacturer Massey-Harris.

The M5's sloped front plate was moved farther out, the bow gunner got a .30-caliber machine gun in a ball mount, and the driver could use a .30-caliber machine gun mounted in the middle of the front plate.

Improvements to the M5, including a turret bustle and an escape hatch in the hull floor, resulted in the M5A1, which began appearing in late 1942. By June 1944, M5s and M5A1s totaled 6,810. Great Britain received 1,131 M5s and M5A1s, both labeled Stuart VI.

And the M3A3

With the same radial engines as other M3s, the M3A3 comprised M3 refinements and traits of the M5 (which had already entered production). Additionally, the sides were sloped 20 degrees in from the vertical. Most of the 3,427 M3A3s were for American allies: 2,045 for Great Britain (Stuart V); 277 for the French in North Africa; and 1,000 for China. **FSM**

Modeling the Stuart

- 1/35 scale: Academy (M3, M3A1), Accurate Armour (M3A3 recon), AFV Club (M3A3; M5A1 early, mid-production, late), Royal (M3), Tamiya (M3)
- 1/72 scale: Hasegawa (M3), Mirage (M3, M3A1)
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